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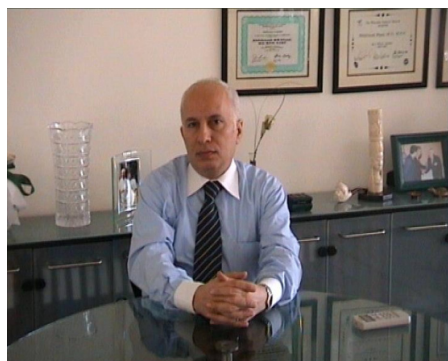
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With the fifth issue this year we are rejoicing at the level and the quality we are receiving and reviewing from our readers and contributors. In this issue papers deal with various topics of interest to family physicians.

A randomized paper from Saudi Arabia looked at the efficacy of almonds, pistachios, and mixture of both, on some risk factors of cardiovascular disease. A total of 46 patients were recruited. Subjects were assigned randomly into 3 groups to receive the experimental diet 60 g/d of: almonds, pistachios or a mixture of both for 12 weeks. There was improvement of TC:HDL (10.87%, 13.04%, 10.64%) and LDL: HDL (13.79%, 12.16%, 14.29%) for almond, pistachios and mixture respectively. Glucose and HDL-c levels did not change significantly among groups. The authors concluded that the incorporation of nuts into diets of heart disease patients markedly improved lipid profile and anthropometrics measurements.

A cross-sectional survey among King Saud University students, looked at the prevalence of Irritable Bowel Syndrome. A total of one thousand, three hundred and fifty students were surveyed. The data was collected via self-administered questionnaires that were prepared in Arabic. The study shows a significant relationship between IBS and psychological stresses, gastroenteritis, and pelvic surgery. IBS affects a considerable percentage of KSU students, especially females. About 34% of the sample had symptoms of IBS although they were not diagnosed. The authors concluded that more research is needed on IBS.

A paper from Yemen looked at assessment of bed utilization at Algamhouria Modern Hospital, Aden. The study aimed to assess the effectiveness of the use of hospital beds in internal medicine and surgical departments and to compare the bed utilization indices in their hospital with hospitals in other countries. The bed occupancy rate for the hospital was (35%). The highest bed occupancy (61%) was in internal medicine and the lowest bed occupancy in the urology unit (11%). The average length of stay in the hospital was 10.5 days. The study provides important indices on hospital bed utilization and firmly establishes the importance of further comprehensive studies for hospital bed utilization and resources.

A paper from Libya discussed the case of a Diabetic Lady with Acanthosis Nigricans, Alopecia areata, and Hirsutism. A young thirty-seven year old lady, who was a diabetic presented complaining of a hyperpigmentation on body flexures, hirsutism on her face, and a solitary patch of alopecia on her occipital scalp. The author stressed that such a case needs a compassionate and multidisciplinary intervention approach with dietary and life style modifications.

A cross-sectional survey paper from Pakistan looked at the Knowledge, Expectations And Satisfaction Survey of Patients with Low Back Pain in a Family Practice Clinic at A Teaching Hospital, in Karachi. A total of 303 patients with low back pain presented at the Family Practice Clinics at Aga Khan University. Although the expectation of patients from their Family Physicians is found to be low (less than 50%), surprisingly a majority (75%) of patients are satisfied with the attitude demonstrated by their Family Physicians.

The authors concluded that a high level of satisfaction is found among patients of family physicians with regard to low back pain in this Family Practice Center. It is the Primary care physician whom patients will always return to if they are not satisfied with management of low back pain. Furthermore it is in a doctor's own best interest to maintain the status quo and not to challenge the patient's attribution of cause or affect in non-specific LBP.

A paper from Kuwait looked at Childhood diffuse large B cell lymphoma (PLB) of bone. PLB is rare in children and there are a very limited number of reports concerning the best treatment option for this subtype of lymphoma in children as well as adults. The authors report a fourteen year old girl who presented with stage IV E PLB of diffuse large B cell pathological subtype with literature review of the epidemiology, clinical presentation, radiological and pathological diagnosis, staging, treatment options and finally prognosis of PLB.

A cross sectional study from Jeddah looked at Primary Health Care Physician's Knowledge and Educational need on Substance abuse and Dependence. A total of one hundred and ten physicians were invited to be enrolled in the study and filled in a pre-designed self administered questionnaire. The study showed that the majority of the physicians (90%) were confronted with less than 10 abusers throughout the previous year. Meanwhile, although the majority of the physicians had reasonable knowledge about the signs and symptoms suggesting presence of substances/drugs abuse, nevertheless about three quarters indicated that they would rather refer the patients to specialised centres. The authors concluded that there is a need to encourage primary care physicians to take more care of patients suffering from drug addiction and that further training is needed.

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The efficacy of almonds, pistachios, and a mixture of both, on some risk factors of cardiovascular disease

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Abstract

Background: Consumption of nuts may lower the risk of cardiovascular disease by reducing lipid profile, and high weight and glucose levels.

Objective: To evaluate the efficacy of some nuts, on metabolic parameters of cardiovascular disease.

Material and Methods: In a completely randomized design, 46 patients (45.65% male, 54.35% female) with mean age of 46.50 10.67 were recruited from Al-Noor Hospital and private clinics. Subjects were assigned randomly into 3 groups to receive the experimental diet 60 g/d of; almonds, pistachios or a mixture of both for 12 weeks.

Results: Significant results among the three treatments were obtained. Total cholesterol (P = 0.004, 0.049, 0.044), LDL-c (P = 0.025, 0.015, 0.001), Triglyceride (P = 0.018, 0.027, 0.049), BMI (p=0.05, 0.009, 0.01) waist circumference (P = 0.001, 0.05, 0.006),

Hip circumference (P = 0.021, 0.036, 0.015), weight (P = 0.053, 0.073, 0.032). Improvement of TC: HDL (10.87%,13.04%, 10.64%,) and LDL: HDL (13.79%, 12.16%, 14.29%) for almond, pistachios and mixture respectively. Glucose and HDL-c levels did not change significantly among the groups. No significant differences in measurements within groups were obtained.

Conclusions: The incorporation of nuts into the diet of heart disease patients markedly improved lipid profile and anthropometric measurements.

Key words: cardiovascular, nuts, lipid profile, glycemic, anthropometrics.

Introduction

Epidemiologic studies around the world have shown a drastic increase in cardiovascular diseases (CVD) (1). The alarming prevalence of cardiovascular disease has been well documented and extensively publicized in Saudi Arabia(2). Diet remains the cornerstone of prevention efforts of cardiovascular disease (3). Recently revised national dietary recommendations have de-emphasized the role of lowering total fat (4, 5). Focusing exclusively on the reduction of saturated fat and cholesterol may reduce HDL-c levels, adversely affecting TC/ HDL-c and LDL-c/ HDL-c (6, 7). Several studies have shown that nuts in general offer protective benefits against heart disease (8-13), resulting in significant reductions in blood pressure, fasting glucose and lipid abnormalities compared with a low-fat diet (14). However, nut consumption is not yet part of recommendations for the general population and patients with hyperlipidemia (15, 16). In this context, this study aimed to determine if consumption of almonds, pistachios or a mixture of both would result in any biochemical

or anthropometric improvement, when given as part of a three-month heart diet. This study hypothesized that there will be no significant difference in measurements with the three treatments.

Materials and Methods

Sample:

The inclusion criteria of the sample was; diagnosis of cardiovascular disease, both genders, individuals of any age < 69 years, presentation to the clinic for routine care and informed consent to be obtained from the patients. The exclusion criteria was pregnancy, end-stage renal disease or liver disease, vitamin or mineral supplementation, nuts allergy and unwillingness to adhere to study protocol.

Fifty six subjects met the selection criteria and were enrolled in the study. Forty six subjects continued and finished the study, 21 men and 25 women. Subjects were asked to maintain their normal diet, physical activity and other lifestyle habits throughout the study, and to record any signs of illness, allergy and new medications taken. Patients were monitored for necessary analysis through a follow-up card.

Educational information as well as brochure and CD on almonds and pistachios, in Arabic language, were introduced to patients to clarify nut roles in the field of management for patients with cardiovascular complications.

The Study Approval:

This study was approved by Ministry of Health and the Hospital Boards in which the research was undertaken. All subjects gave informed consent.

Experimental Design:

A completely randomized design was utilized. Subjects were divided randomly into 3 equal groups to receive either 60 g almonds, 60 g, pistachios and half portions of almonds and pistachios (30+30 g) per day, consumed as a whole, unsalted, with a meal or as a snack for 3 months. Nuts were given out in pre-measured storage bags for each individual subject. The experimental

nuts prescription was not energy restricted.

Intervention Evaluation:

The intervention trial was evaluated on the basis of adherence to respective nuts prescriptions. Compliance was assessed every 4 weeks from food diaries. A dietary checklist on which subjects recorded nuts consumed, were submitted to the patients. All subjects in an individual meeting received detailed instructions in keeping nuts diaries. The diaries were reviewed with each subject at the time of receipt.

Outcome Measurements:

Assessment of study outcomes includes anthropometric (weight, height, waist and hip circumferences) and biochemical analysis (fasting serum glucose, triglyceride, total cholesterol, LDL cholesterol and HDL cholesterol levels). A blood sample was drawn after 12 to 14 hours overnight fast, at baseline and during the fourth, eighth and twelfth weeks.

Statistical Analysis:

Results are reported as means SD. Student's paired t-test (two tailed) was used to assess the significance of changes across each tested nuts (week 0 - week 12). The differences within treatment groups and testing of the hypotheses were evaluated using a repeated measures analysis of variance technique (One way ANOVA; F. tests). Comparison among means, were assessed by least Significant Difference. Level of P 0.05 was considered statistically significant. All analyses were conducted using SPSS software.

Results

(See pages 5 - 9 for Tables and Figures)

Subject Characteristics:

Table 1 reports the general, anthropometrics, and biochemical characteristics of the study groups at baseline. Poor glycemic, lipidemic and anthropometrics control was found in a large proportion of participants when compared with target lipid and glucose levels for heart disease patients (17).

Tables 2, 3, and 4 summarize means of biochemical and anthropometric values at baseline, 4, 8 and 12 weeks of three treatments. These tables also report the estimate for the entire study population parameter at 95% confidence interval. Figures 1, 2, and 3 show biochemical and anthropometric values at baseline and endpoint of almond, pistachio, and mixture respectively.

Effects of Experimental Treatments on Biochemical Measurements:

Mean of total cholesterol, LDL and triglyceride, decreased significantly from baseline to end point of the study in the different groups. P values range between (0.001- 0.049) and improvement percentage range between (5.32 %- 10.77 %). No significant changes in HDL-c and glucose level could be demonstrated among the three treatments. Improvement in TC/HDL-C was (10.87%, 13.04%, 10.64%), whereas in LDL-C/HDL-C (13.79%, 12.16%, 12.29%) for almonds, pistachios and mixed group respectively.

Effects of Experimental Treatments on Anthropometric Measurements:

Mean BMI, waist and hip, decreased significantly over the period of the study in different groups. P value ranged between (0.001 - 0.05) and improvement percentage ranged between (1.82 - 3.03 %).

Percentage of improvement of biochemical and anthropometric measurements among three treatments is given in Figure 4. Improvement at the endpoint of all treatments seems appropriate when compared with targets (recommended) values for cardiovascular disease (Figure 5, 6, 7).

Hypothesis Testing: (One way ANOVA; F. tests)

The study findings show no significant differences within three treatments of nuts on means of biochemical and anthropometric measurements of sample surveyed except there was a difference in weight of the patients favouring the mixture treatment (Table 5).

Demographic Data		Biochemical		Anthropometric	
Parameter	Frequency	Parameter	Mean \pm 95 %CI.	Parameter	Mean \pm 95 %CI.
Gender (%)	Male (45.65)% Female (54.35)%	Fasting Glucose (mg/dl)	130.11 \pm 46.92 (116.01– 144.21)	Height (cm)	162.21 \pm 8.98 (159.5 – 164.91)
Age/year (mean)	46.50 \pm 10.67	Total Cholesterol(mg/dl)	212.58 \pm 44.18 (199.30-225.85)	Weight (kg)	80.79 \pm 16.76 (75.69– 85.88)
Income/rival (mean)	8122.22 \pm 111.94	Triglycerides(mg/dl)	142.58 \pm 50.29 (127.47-157.69)	BMI (kg/m2)	31.69 \pm 6.36 (29.79– 33.60)
Education (%0)	Illiterate(6.7), primary(13.3) intermediate(8.9), secondary (31.1), university(40.00)	HDL(mg/dl)	45.88 \pm 11.08 (42.55– 49.20)	Waist (cm)	103.42 \pm 10.27 (100.34–106.50)
Smoking (%)	Yes(17.8), No (82.20)	LDL(mg/dl)	132.03 \pm 43.23 (119.04 - 145.02)	Hip (cm)	111.77 \pm 11.43 (108.33–115.20)
Exercise (%)	Yes(37.80), no(62.2)	T Cholesterol :HDL	4.63 :1		
Duration of disease (mean)	9.49 \pm 9.36 (6.28-12.71) (6.28-12.71)	LDL :HDL	2.88 :1		
Type of Disease	Hypertension (36.5%), Atherosclerosis (20.3%), Valvular Heart Disease (5%), Weakness (6.8%), DM (21.6%), Myocardial Hypertrophy (1.65%).				

Figures in parentheses are study population estimate

Table 1: Baseline Subject Characteristics

Variables	means±std		95 %CI		P value	
	Week 0	Week 4	Week 8	Week 12		
Glycemic parameter mg/dl						
Fasting blood glucose	132.76±57.68 (102.02-163.49)	125.13±53.31 (96.71-153.54)	123.88±59.94 (91.94-155.81)	118.88±30.10 (102.84-134.91)	13.88±41.50	0.201
Lipid profile mg/dl						
Total Cholesterol	214.13±49.68 (187.65-240.60)	207.81±36.91 (188.14-227.48)	202.44±39.03 (181.14-223.23)	197.50±49.86 (170.93-224.07)	16.63±19.31	0.004
LDL Cholesterol	132.39±48.34 (106.63-158.15)	129.61±36.12 (110.36-148.85)	121.70±40.53 (100.10-143.30)	119.03±36.12 (99.77-138.28)	13.37±21.45	0.025
HDL Cholesterol	46.38±8.89 (41.64-51.11)	46.63±9.91 (41.34-50.91)	46.38±10.33 (40.87-51.88)	47.94±10.27 (42.46-53.41)	1.56±5.25	0.253
Triglyceride	134.56±57.15 (104.11-165.02)	130.44±58.14 (99.46-161.42)	129.50±57.78 (98.71-160.29)	125.81±52.13 (98.04-153.59)	8.75±13.20	0.018
Anthropometrics measurements						
Weight kg	77.94±14.81 (70.05-85.83)	76.94±13.78 (69.59-84.28)	76.14±13.23 (69.59-83.47)	76.38±12.99 (69.45-83.30)	1.56±2.98	0.053
BMI kg/	30.17±6.65 (26.62-33.7)	29.76±6.05 (26.53-32.98)	29.64±5.95 (26.47-32.81)	29.62±6.02 (26.40-32.82)	0.56±1.03	0.05
Waist cm	102.74±12.99 (95.82-109.66)	101.74±13.19 (94.71-108.77)	101.19±13.23 (94.14-108.24)	100.85±13.29 (93.77-107.93)	1.89±1.58	0.001
Hip cm	109.34±11.92 (102.99-115.70)	107.39±10.05 (102.03-112.74)	106.94±10.02 (101.60-112.28)	106.03±8.97 (101.25-110.80)	3.32±5.14	0.021
Ratio						
TC:HDL	4.6 :1	4.5 :1	4.4 :1	4.1 :1	00.50	10.87%
LDL:HDL	2.9 :1	2.8 :1	2.6 :1	2.5 :1	00.40	13.79%

Figures in parentheses are study population estimate

Table 2: The Effect of Almonds on Anthropometric and Biochemical Variables 95% CI

Variables	means±std				95 %CI difference Wk0 v wk12	P value
	Week 0	Week 4	Week 8	Week 12		
Glycemic parameter mg/dl						
Fasting blood glucose	124.85±24.01 (110.34-139.35)	122.15±24.41 (107.40-136.90)	121.00±25.93 (105.33-136.67)	114.23±24.78 (96.79-131.67)	10.62±13.59	0.059
Lipid profile mg/dl						
Total Cholesterol	214.69±40.98 (189.93-239.64)	210.54±36.17 (188.68-232.39)	206.15±30.01 (188.02-224.29)	202.23±27.55 (185.58-218.88)	12.49±20.55	0.049
LDL Cholesterol	139.57±41.16 (114.69-164.44)	133.22±45.37 (105.80-160.63)	132.25±40.34 (107.80-160.63)	132.15±40.40 (107.74-156.56)	7.42±9.44	0.015
HDL Cholesterol	47.15±12.42 (39.65-54.66)	47.00±10.34 (40.68-53.32)	48.15±10.34 (41.90-54.40)	50.00±11.76 (42.89-57.11)	2.86±7.95	0.221
Triglyceride	136.23±29.72 (118.27-154.19)	132.08±40.17 (107.80-156.35)	126.23±32.36 (106.68-145.78)	125.23±28.02 (108.30-142.17)	11.00±15.70	0.027
Anthropometrics measurements						
Weight kg	73.94±5.30 (70.74-77.14)	73.25±6.29 (69.45-77.05)	73.27±5.30 (70.15-76.39)	73.22±5.04 (70.18-76.27)	0.72±1.31	0.073
BMI kg/	30.90±3.77 (28.62-33.18)	30.86±3.92 (28.50-31.23)	30.26±3.45 (28.12-32.54)	30.15±3.89 (27.80-32.50)	0.750±1.80	0.009
Waist cm	99.69±8.12 (94.54-104.84)	99.45±8.45 (94.05-104.87)	98.58±9.66 (92.74-104.42)	98.19±9.77 (92.29-104.10)	1.50±0.43	0.05
Hip cm	109.85±5.00 (106.34-113.35)	109.65±6.57 (105.68-113.62)	108.69±6.12 (104.98-112.40)	108.81±6.30 (104.99-112.62)	1.04±1.59	0.036
Ratio						
TC:HDL	4.6 :1	4.5 :1	4.3 :1	4.0 :1	00.60	13.04%
LDL:HDL	2.96 :1	2.8 :1	2.7 :1	2.6 :1	00.36	12.16%

Figures in parentheses are study population estimate

Table 3: The Effect of Pistachios on Anthropometric and Biochemical Variables 95 %CI

Variables	means±std				95 % CI difference Wk0 v wk12	P value
	Week 0	Week 4	Week 8	Week 12		
Glycemic parameter mg/dl						
Fasting blood glucose	131.74±51.34 (104.39-159.10)	125.13±48.14 (99.47-150.78)	121.50±48.22 (95.80-147.20)	117.44±46.61 (92.62-142.28)	14.31±31.29	0.087
Lipid profile mg/dl						
Total Cholesterol	209.31±43.56 (186.10-232.52)	204.19±48.68 (178.25-230.13)	200.63±45.66 (176.29-224.96)	194.31±41.29 (172.31-216.31)	15.00±27.25	0.044
LDL Cholesterol	125.54±41.19 (103.5147.48)	117.90±42.24 (95.39-140.41)	114.65±46.37 (89.94-139.36)	112.02±35.21 (93.25-130.78)	13.52±13.82	0.001
HDL Cholesterol	44.34±12.39 (37.74-50.94)	43.94±12.41 (37.33-50.56)	44.63±11.85 (38.31-50.94)	45.99±11.11 (40.07-51.91)	1.65±4.67	0.178
Triglyceride	155.75±56.20 (125.80-185.70)	146.75±56.84 (111.67-181.83)	143.25±56.20 (110.31-176.19)	139.19±59.70 (107.37-170.99)	16.69±17.65	0.049
Anthropometrics measurements						
Weight kg	89.19±20.95 (78.03-100.35)	88.76±21.68 (77.21-100.32)	88.34±21.51 (76.88-99.80)	87.66±20.44 (76.77-98.55)	1.53±2.60	0.032
BMI kg'	33.87±7.46 (29.92-37.81)	33.56±8.02 (29.28-37.82)	33.45±7.96 (29.21-37.69)	33.21±7.61 (29.15-37.26)	0.66±0.90	0.010
Waist cm	106.75±11.31 (100.72-112.78)	105.70±11.34 (99.65-111.75)	105.31±11.64 (99.12-111.52)	105.34±11.65 (99.13-111.55)	1.41±1.74	0.006
Hip cm	115.75±13.70 (108.45-123.05)	113.46±14.84 (105.55-121.37)	113.20±13.51 (106.00-120.40)	113.43±13.41 (106.28-120.58)	2.32±3.39	0.015
Ratio						
TC:HDL	4.7 :1	4.6 :1	4.5 :1	4.2 :1	00.50	10.64%
LDL:HDL	2.8 :1	2.7 :1	2.6 :1	2.4 :1	00.04	14.29%

Figures in parentheses are study population estimate

Table 4: The Effect of Mixture Treatment on Anthropometric and Biochemical Variables 95% CI

Variable	Almond	Pistachios	Mixture	P value*
Glucose	118.88±30.10	114.23±24.78	117.44±46.61	0.873
Tc	197.50±49.86	202.23±27.55	194.31±41.29	0.877
LDL	119.03±36.12	132.15±40.40	112.02±35.21	0.351
HDL	47.94±10.27	50.00±11.76	45.99±11.11	0.624
Tg	125.81±52.13	125.23±28.02	139.19±59.70	0.680
Weight	76.38±12.99	73.22±5.04	87.66±20.44	0.026**
BMI	29.62±6.02	30.15±3.89	33.21±7.61	0.224
Waist	93.60±14.14	98.19±9.77	105.34±11.65	0.262
Hip	106.03±8.97	108.81±6.30	113.43±13.41	0.128

Significance of the difference between three treatments using the Using Least Significant Difference.
Significant at P < 0.05

Table 5: Comparisons of Means among Three Treatments/ ANOVA F TEST

Discussion

It appears that participants seem to live sedentary lives nevertheless it is recommended that cardiovascular disease patients should be physically active. Moreover, this study showed poor biochemical and anthropometrics control among subjects when compared with target lipid and glucose levels for heart disease patients. Such a situation might well lead to increase the morbidity and mortality rate. High cholesterol can lead to plaque buildup in the arteries, which could eventually result in a heart attack or stroke (18). The benefits of lowering cholesterol levels include reductions in coronary heart disease (CHD), total mortality, myocardial infarction (MI) and stroke(19). Hence, consumption of almond and pistachios could be well utilized in lowering cholesterol level as demonstrated by this study and other studies such as(20 21, 22). According to Buckley (23) every 1% reduction in cholesterol reduces the risk of getting heart disease by 2%, Thus a 7.77% , 5.80% and 7.17% drop in total cholesterol levels by consuming almond, pistachios and mixture treatments respectively, might be expected to yield 15.54%, 11.60 and 14.34% reductions in morbidity.

The present findings also compare favorably with those of studies evaluating the effect of almonds and pistachios on LDL cholesterol level (11, 12, 13, 24, 25, 26). Elevated LDL cholesterol has been identified as the primary target of cholesterol-lowering therapy in heart disease patients (27). According to the National Cholesterol Education Program (NCEP) (28), every 7% decrease in LDL cholesterol corresponds to a reduction in the incidence of CVD of 11%, Thus a 10.10% , 5.32% and 10.77% drop in LDL-c levels by consuming almond, pistachios and mixture treatments, might be expected to yield 15.87%, 8.36% and 16.92% reductions in the incidence of CVD. Results of this study showed significant changes in triglyceride concentrations in all groups. These results were similar to those studies showing that diets enriched with nuts that are high in MUFAs reduced serum triglycerides significantly (29, 30). These findings may well be utilized by diabetic patients who suffer elevated triglyceride levels as well as other risk factors, that are associated strongly with elevated triglyceride levels, which include low levels of HDL cholesterol, obesity, insulin resistance and a tendency toward excessive blood clotting (31). It had been found that

the three treatment interventions of the study contribute positively in improving the ratio of LDL-c to HDL-c and ratio of total cholesterol to HDL-c in a cardio-protective manner. These results were also in line with Mukuddem-Petersen J. et al (32). The ratio of total blood cholesterol to HDL or of LDL to HDL ratios is a strong predictor of coronary heart disease. In the Framingham Heart study, for instance, the ratio of total cholesterol to HDL and the ratio of LDL to HDL were found to have the strongest associations with coronary heart disease (33). The desirable lipid-profile obtained by nuts could be well due to the fact that nuts are comprised of monounsaturated, polyunsaturated fats and are a rich source of antioxidants, fiber, phyto-sterols, magnesium and folic acid that could induce a protective lipid profile in hypercholesterolemic subjects and might beneficially influence cardiovascular risk.

Indices including BMI and waist circumference (WC) predicted prevalent CVD risk factors. The cardio-metabolic risk associated with abdominal obesity is attributed to the presence of visceral adipose tissue (VAT), which promotes insulin resistance, dyslipidaemia and

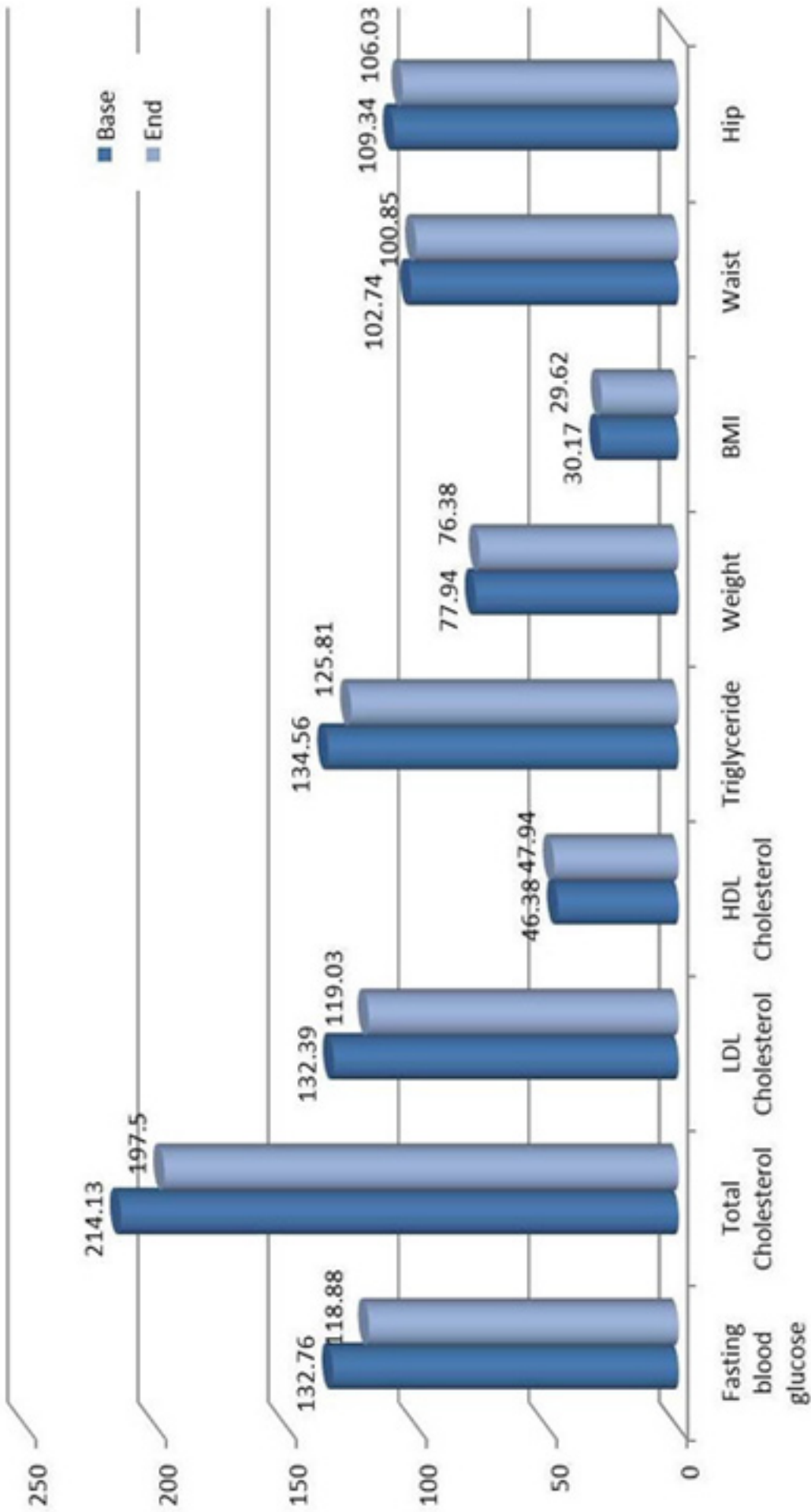


Figure 1. The Effect of Almonds on Anthropometric and Biochemical Variables

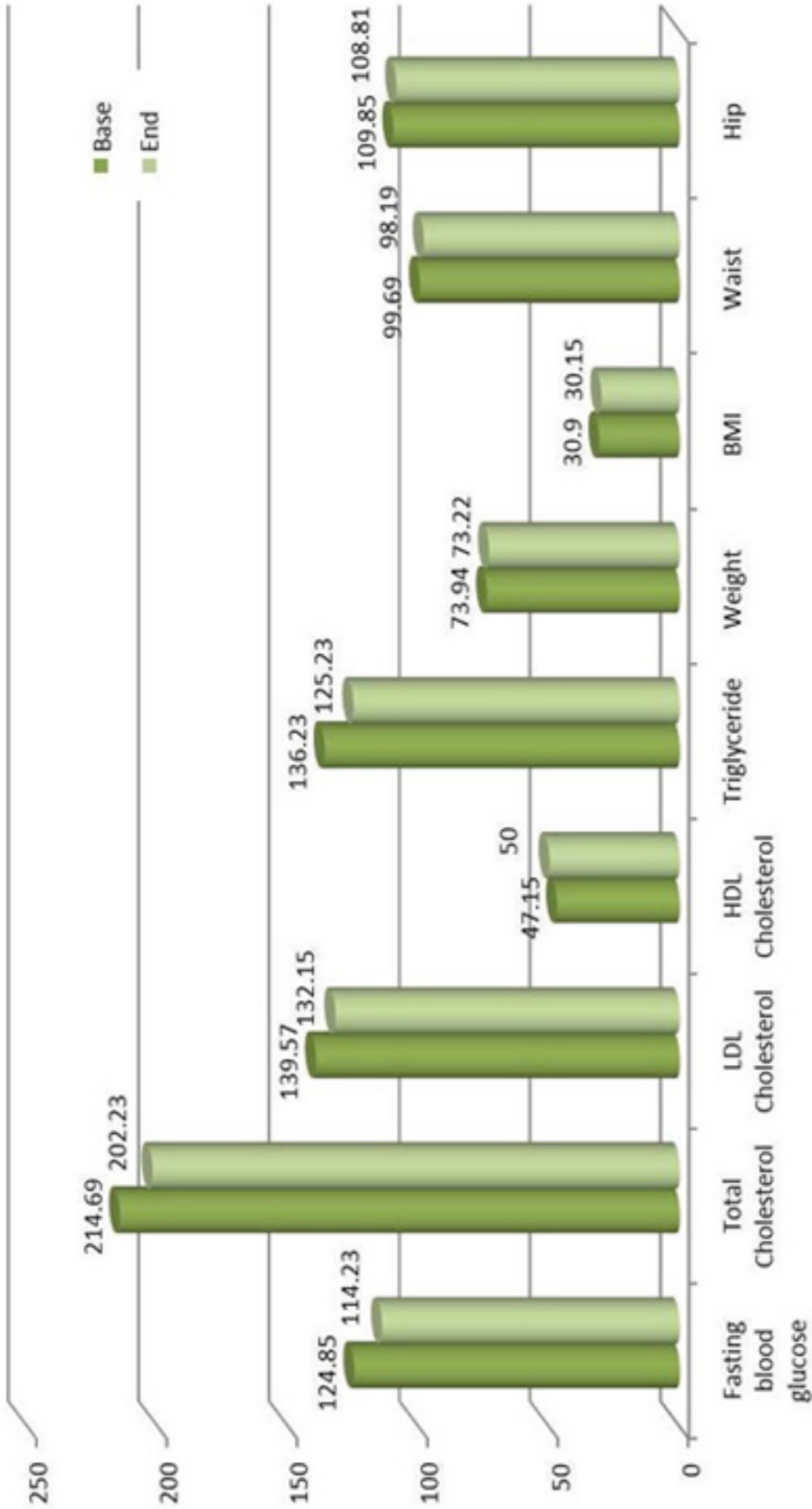


Figure 2: The Effect of Pistachios on Anthropometric and Biochemical Variables

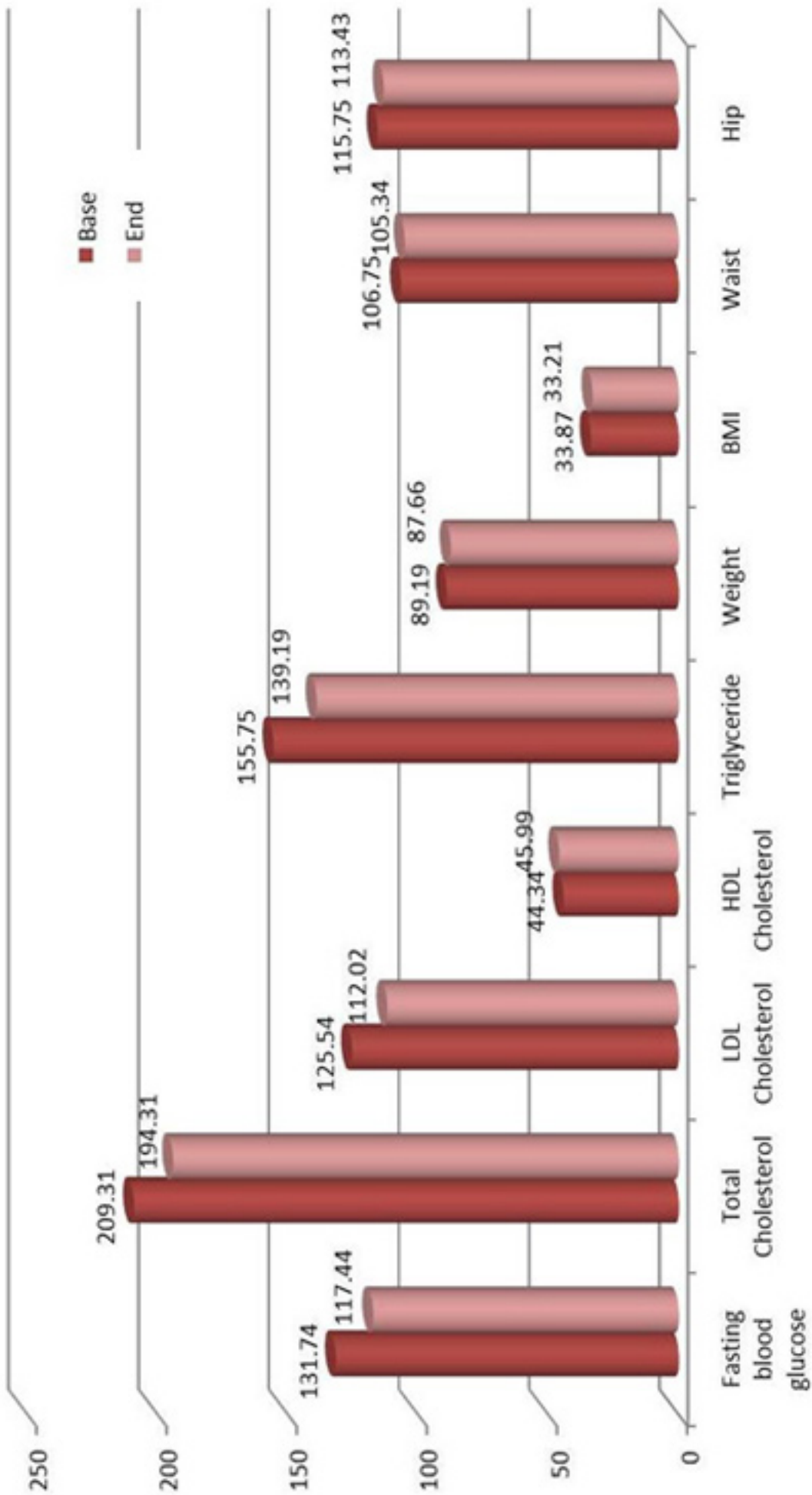


Figure 3: The Effect of Mixture Treatment on Anthropometric and Biochemical Variables

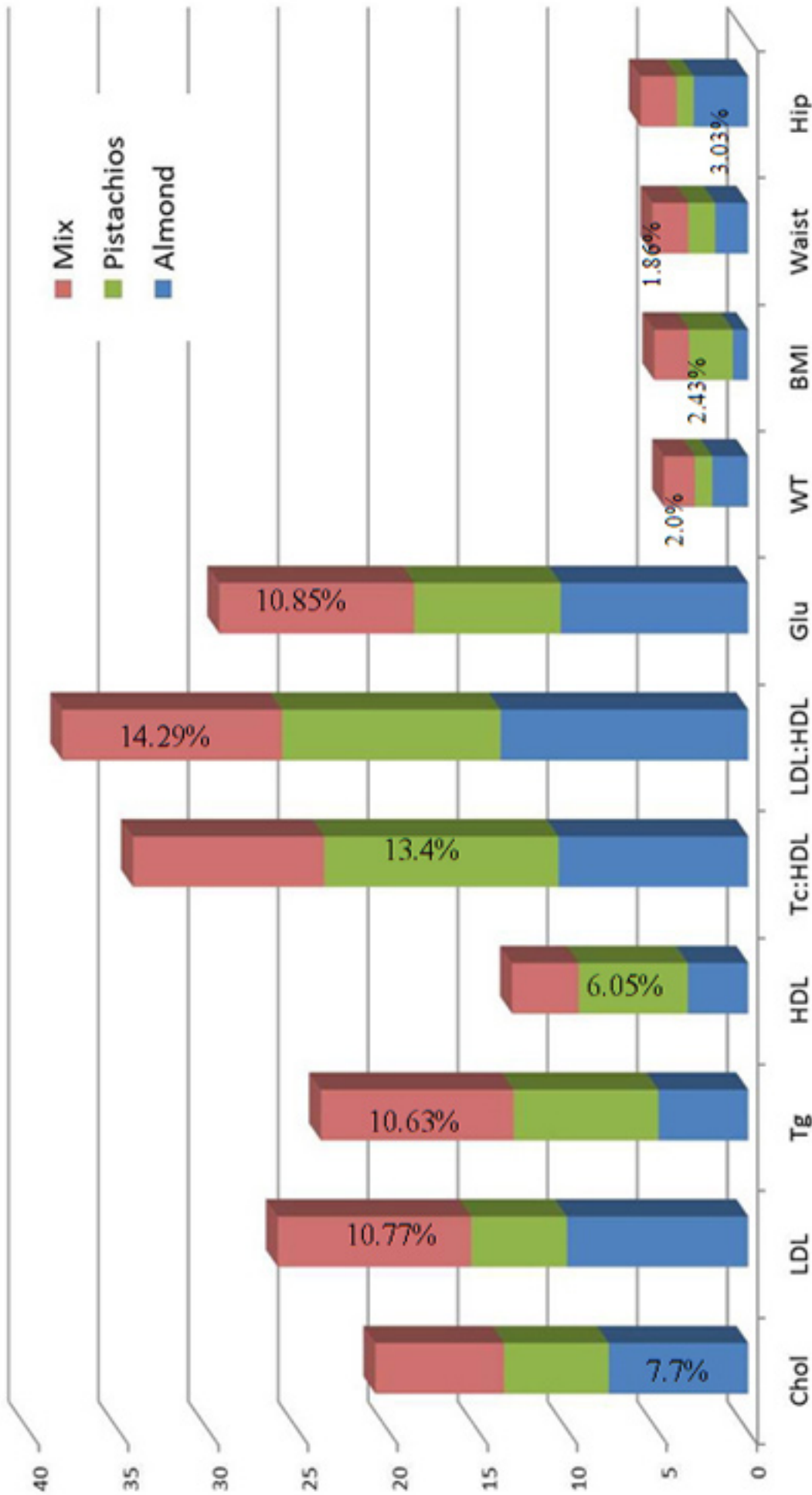


Figure 4: Percentage of Improvement of Biochemical and Anthropometric among the Three Treatments

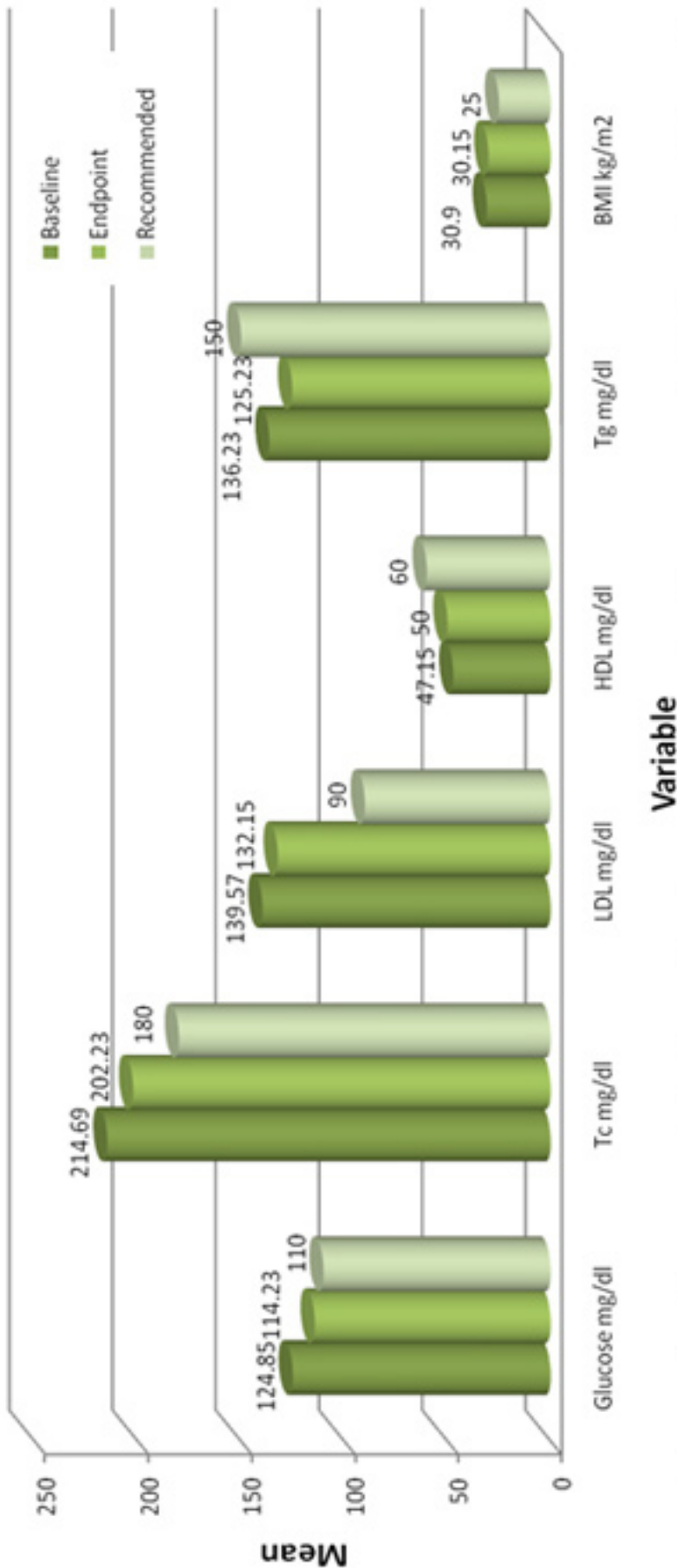


Figure 6: Comparison between study findings at baseline and endpoint pistachios means and guidelines (targets) for cardiovascular

hypertension. Studies demonstrated that 1 cm increase in WC is associated with a 2% increase in risk of future CVD (34). The results of this study indicate that all three treatments had markedly improved the anthropometric parameters of the participants. The incorporation of nuts into the diet does not promote weight gain - as explained by Mandalari G. et al and Traoret C.J. et al (35, 36)- because they are highly satiating, their energy-yielding nutrients have limited bio-accessibility, and they may promote energy expenditure. It has been found that almonds, pistachios, and mixture treatments produced no significant change in fasting blood glucose and HDL-C level. Although the beneficial effects of almond, pistachio and mixed treatments over the twelve-week consumption period on HDL-c and glucose were slight, it is possible that the long term effect of consumption could prove to have higher significant changes which may help in the management of blood glucose levels, and that may result in a lower risk for type 2 diabetes and coronary heart disease.

Conclusion

Coupled with other studies, the results of the present study demonstrate positive effect on decreasing lipid profiles without weight gain and introduces significant detail regarding the efficacy of nuts in cardiovascular subjects.

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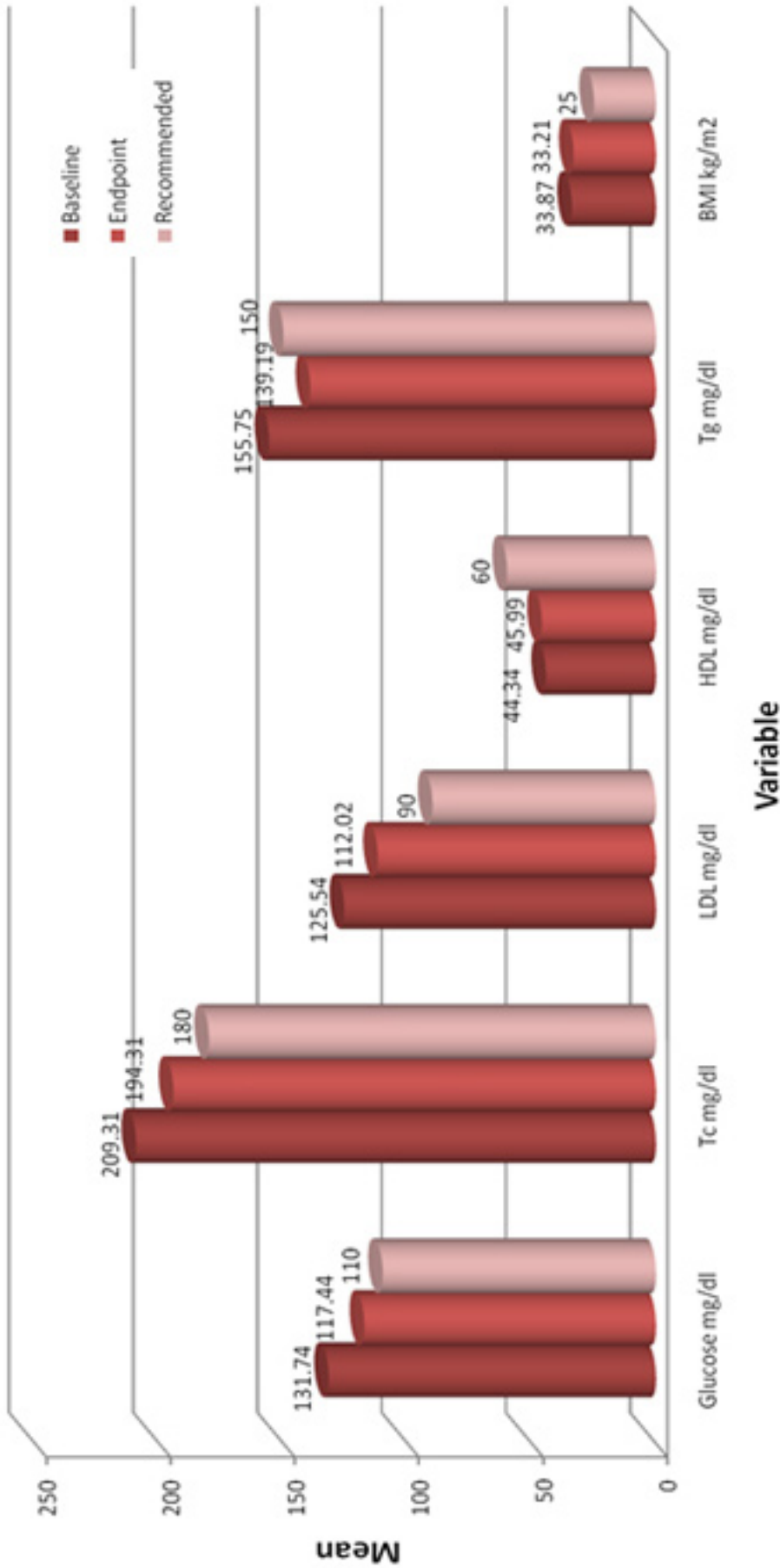


Figure 7. Comparison between study findings at baseline and endpoint mixture means and guidelines (targets) for cardiovascular

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(continued page 58)

Prevalence of Irritable Bowel Syndrome among Students in King Saud University, Riyadh, Saudi Arabia

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Abstract

Objective: The aim of this study is to estimate the prevalence of Irritable Bowel Syndrome (IBS) among King Saud University (KSU) students, Riyadh, Saudi Arabia, taking the factor of life style and stress into account.

Methods: This study was a cross-sectional survey among KSU students: one thousand and three hundred fifty students were surveyed within 3 weeks in January 2010. The data was collected via self-administered questionnaires that were prepared in Arabic. The questionnaires were distributed to 17 colleges. These questionnaires include questions for diagnosed students, questions that meet the Rome III diagnostic criteria and questions about psychological stresses and life style.

Results: From 1350 questionnaires, 1237 were accepted and included 561 (45.4%) males and 676 (54.6%) females. The response rate is 91.6%. Among the participants, 175 (14.2%) were diagnosed with IBS in which 9.3% were males and 18.4% were female. From the diagnosed students, 66.9% use medications for relieving their symptoms. Other than the students who were diagnosed with IBS, we found in the study that 157 males and 266 female students match the ROME III criteria. This study shows a significant relationship between IBS and psychological stresses, gastroenteritis, and pelvic surgery. However, it shows no relationship between IBS and smoking or irregular eating.

Conclusion: IBS affects a considerable percentage of KSU students especially females. There are certain factors that may play a role as cause or an association with IBS (e.g. psychological stress). About 34% of the sample have the symptoms of IBS although they were undiagnosed with it. The research, on IBS however, is insufficient in our country. Thus, it is important to put an effort into studying this condition for the sake of our society's health.

Key words: Irritable Bowel Syndrome, university students, Saudi Arabia.

Introduction

Irritable Bowel Syndrome (IBS) is not a disease; it is a functional disorder of the gastrointestinal system which is not caused by an underlying organic etiology, (1). Usually, this condition is not progressive and does not lead to any future complications such as bowel cancer, ulceration of mucous membrane of GIT, or even inflammation. (2,3,4,5)

Studies show IBS as a common health problem. For example, this syndrome affects 20% of American adults, which means one in five has IBS. In addition, it is the commonest disorder diagnosed by doctors; thus, it accounts for a huge cost for patients and the health care system. (2,5,6).

IBS is a disorder, which does not have a specific theory. There has been much research on the underlying etiologies of this syndrome(2). Some study the relationship of diseases such as bacterial infections associated with IBS, which is based on post-infectious IBS theory. Others focus on Celiac disease and hypersensitivity of muscles and nerves of the gastrointestinal tract as a precipitating factor for IBS. Other well-known theories include psychological factors such as (anxiety and depression) and serotonin metabolism.(7)

There is no specific diagnostic method for IBS, so physicians are using symptoms as diagnostic criteria.(8) The diagnostic criteria of IBS has changed over time. In 1978, the first symptom based criteria was described by Manning et al.

Manning Criteria for IBS

(Usually 2 or 3 symptoms are required for criteria fulfillment):

1. Looser stools at onset of pain
2. More frequent bowl movement
3. Visible (abdominal pain) distension
4. Passage of mucus
5. Feeling of incomplete evacuation

In 1989, Rome criteria came to existence and over time, and were modified to Rome I, II and III. In 2006, the Rome II criteria was changed and revised to be fulfilled for the last 3 months rather than 12 months with symptom onset at least six months prior the diagnosis as the basis of Rome III. Nowadays, this criteria has been widely used despite the few studies about its accuracy.

Rome III criteria for IBS*

Recurrent abdominal pain or discomfort at least three days per month in the last three months associated with two or more of the following:

1. Improvement with defecation
2. Onset associated with a change in frequency of stool
3. Onset associated with a change in (appearance) of stool

*Criterion fulfilled for the last three months with symptom onset at least six months prior to diagnosis.

The aim of this study is to estimate the prevalence of Irritable Bowel Syndrome among King Saud University (KSU) students, Riyadh, Saudi Arabia, taking the factor of life style and stress into account.

Materials and Methods

Study Setting:

The study was carried out from 6 January 2010 to 22 November 2010 in King Saud University, Riyadh, Kingdom of Saudi Arabia.

Sample size:

One thousand three hundred fifty copies of the questionnaires were randomly distributed among seventeen colleges of KSU giving a response rate of 91.6%. Thus, 71 questionnaires with incomplete answers were excluded giving a final total of 1237 responses; 561 (45.4%) were males and 676 (54.6%) were females.

Participants:

University students from 17 different colleges of the University which are Computer Science, Administrative Sciences, college of Sciences, Nursing, Arts, Medicine,

Pharmacy, Applied Medical Sciences, Engineering, Agriculture, Physiotherapy, Law, Dietary, Labs, Community, Languages. Participants were asked to voluntarily complete the questionnaires and the person who distributed the questionnaires was ready to answer any question about the questionnaires.

Measures:

The data was collected via self-administered questionnaires that were prepared in Arabic. Each questionnaire inquired about personal information and different questions that are related to IBS as a part of the syndrome or as an association. There were three sections; the first section contains questions for students who were diagnosed with the syndrome and how did they deal with their condition (e.g. taking medications.). The second section was designed to meet the Rome III criteria⁹ for those who possibly have the syndrome if the symptoms match the criteria. The last section was about the life style and some common risk factors that may affect or be related to IBS (e.g. psychological stresses, type of diet, smoking..etc).

Statistical analysis:

All collected questionnaires were entered and analysed using Statistical Package of Social Science SPSS version 15. The P value of <0.05 was considered statistically significant.

Results

From one thousand two hundred and thirty-seven students surveyed, 45.4% were males and 54.6% were females. Moreover, one hundred and seventy-five students were diagnosed as IBS patients. One hundred and seventeen of the IBS patients used medications for their symptoms. However, 53.7% of them did not know the type of their medication while 41.7% used medication just for relieving the symptoms related to IBS and 4.6% used medications only to treat their anxiety and depression. An interesting fact of our study is the IBS patients' certain beliefs about the cause of their condition, which are listed below in Table 1.

Causes	%
Organic	6.8
Psychological	57.1
Dietary	15.5
Psychological and dietary	2.5

Table 1: shows students' beliefs about the cause of IBS

In our study, there was a significant difference between each gender; 9.3% of men compared to 18.4% of women report that they have IBS. In addition to the high rate, 28.1% of the female students have abdominal pain synchronized with menstruation. Psychological stress is much higher in those who were reported as having IBS; 54.4% of them have psychological stresses compared to 35.7% of the whole group. Regarding the factor of smoking as being significant, the study shows insignificant relationship between it and IBS.

Our study also shows that IBS has a significant association with gastroenteritis and pelvic surgery. In addition, 60.8% of those who were reported as having IBS have insomnia, compared to 41% of the whole group of the sample having insomnia, with a significant association. Table 2 summarizes the relationships between IBS and other factors.

Factor	P value	
Psychological stress	< 0.05	significant
Insomnia	< 0.05	significant
Gastroenteritis	< 0.05	significant
Pelvic surgery	< 0.05	significant
Family history	< 0.05	significant
Smoking	> 0.05	insignificant
Irregular eating	> 0.05	insignificant

Table 2: summarization of relationships between IBS and other factors

The study also reveals that 27.3% of the total participants, excluding IBS patients believe they have IBS. According to ROME III criteria, we found that 157 male and 266 female students of the undiagnosed sample match its criteria (Table 3).

	Gender	
	Male	Female
Our study	157 (27.9% of male sample)	266 (39.3% of female sample)

Table 3: Number of undiagnosed students who match ROME III criteria

Discussion

The present study highlights the significant difference in gender and the presence of IBS. The prevalence estimates for each gender in our study were 9.3% for men and 18.4% for women who reported that they have IBS; similarly, a US Householders study found the prevalence of IBS was 14.5% for women versus 7.7% of men(10). Both studies show higher prevalence among women.

Some factors are strongly associated with IBS while others are not yet proven. Many studies and research about this syndrome reveal the same facts. In the psychological stress section of the survey, psychological stresses were much higher in those who report having IBS compared to the whole group. In a Korean study, psychological stresses were significantly associated with IBS (adjusted p for trend = 0.005).(11) In a Chinese study involving university students, psychological and psychosomatic symptoms of anxiety ($P < 0.001$) and depression ($p < 0.001$) were encountered more frequently in participants with IBS.(12)

Furthermore, the results highlight a significant association between IBS and insomnia ($p < 0.05$), and these results match another study published in 2010 and applied in Canada by Chun-Yip Hon and Anne-Marie Nicol.(13) In contrast, our study does not report smoking as a significant risk factor for IBS. However, in a Korean study on the prevalence and risk factors of IBS in health screening for those undergoing colonoscopy, laboratory test shows that IBS prevalence was positively associated with current smoking ($p = 0.001$). (12) We found that 157 male and 266 female students of the undiagnosed sample matched the ROME III criteria. These numbers prove that the prevalence of IBS in the community is more than is reflected by the people seeking medical care.

Conclusion

IBS affects a considerable percentage of KSU students, especially females. There are certain factors that may play a role as a cause or an association with IBS (e.g. psychological stress). About 34% of the sample have the symptoms of IBS although they were not diagnosed with it. Research on IBS however, is insufficient in our country. Thus, it is important to put in an effort to study this condition for the sake of our society's health.

Acknowledgement:

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Primary Health Care Physician's Knowledge and Educational Needs concerning Substance Abuse and Dependence in Jeddah, Saudi Arabia

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Abstract

Aims: Assessing the knowledge, attitude and educational needs of primary health care physicians.

Method: Cross-sectional study: One hundred and ten physicians were invited to be enrolled in the study and filled out a pre-designed self administered questionnaire in Jeddah City, Saudi Arabia.

Result: It showed that the majority of the physicians (90%) were confronted with less than 10 substance abusers throughout the previous year. Meanwhile, although the majority of the physicians had a reasonable knowledge about the signs and symptoms suggesting presence of substances/drugs abuse, nevertheless about one quarter (23.2%) indicated that they could manage cases of abuse, the majority of the physicians prefer to refer abusers to higher specialized

health institutes. Almost two thirds of the physicians (63.9%) indicated that it is necessary to include primary health care centers in the management of substance abusers, and the overwhelming majority (94.5%) agreed that they are in need of training in the field of recognition and management of substances/drugs abuse.

Conclusion: Encouraging perspectives of the physicians were their agreement about the inclusion of PHC centers in the management of the abusers, moreover, the overwhelming majority of them indicated that they are in need of training in the field of recognition and management of substances/drugs abusers.

Key words: Primary Health Care Physician, Substance Abuse, Knowledge, Attitude, Management

Introduction

The person suffering from substance abuse or dependence is a vital diagnostic and treatment challenge to primary care clinician. (1) Substance use disorders (SUDs) are a major public health and medical problem. Overall, substance abuse accounts for 1 in 4 deaths in the United States each year, and results in more lives lost, illnesses, disabilities, and family and workplace disruptions than any other preventable condition. (2) This takes a huge toll on the health and safety of individuals and communities and puts unrecognized burdens on health care.

Several terms are used to distinguish different patterns of drug use. The following definitions are in general use: (3)

Use is sporadic consumption of alcohol or drugs with no consequences of that consumption. Abuse is illegal, maladaptive, or

dangerous use of a substance, but does not imply dependence. Physical dependence is a state of adaptation that is manifested by a drug class-specific withdrawal syndrome that can be produced by abrupt cessation or rapid dose reduction of a drug, or by administration of an antagonist. Psychological dependence is a subjective sense of a need for a specific psychoactive substance, either for its positive effects or to avoid negative effects associated with its abstinence.

Addiction is a primary, chronic, neurobiological disease, with genetic, psychosocial and environmental factors influencing its development and manifestations. Addiction is characterized by behaviors that include impaired control over drug use, compulsive use, continued use despite harm, and craving. Substance Use Disorders is a chronic relapsing disorder of both substance abuse and dependence, which are usually taken voluntarily for a purpose of their effect on the central nervous system or to prevent withdrawal.

Data collected by the WHO Regional Office for the Eastern Mediterranean in 2003 estimated that the extent of alcohol use in Saudi Arabia is considerable and that data from the last five years suggests a stable trend in the use of alcohol. (4)

The ability of health care providers to assess and intervene has lagged far behind the current state of knowledge; as few as 5% of substance-abusing patients presenting for medical care have their substance abuse problem recognized. (1)

Addiction affects adolescents and the elderly, all races, and all socio-economic strata. Primary care clinicians should evaluate all new patients for alcohol and drug abuse; drug and alcohol use should also be considered when patients present with new symptoms, especially patients experiencing mood disorders or weight loss. (3)

Although addiction is a difficult

disorder to treat, especially if diagnosed late into the condition, however, remission can be achieved in 35 to 60 percent of patients. (3) Research indicates that physicians can play a positive role in influencing patients' health decisions about substance abuse. Screening and brief intervention, can help change the course of an individual's harmful drinking, when offered by primary care physicians. (2) Fortunately, specific diagnostic criteria for substance abuse and dependence have been developed. (5)

All physicians would encounter patients with chemical dependency. Approximately 25 to 40 percent of hospital admissions are related to substance abuse and its sequelae, and 10 to 16 percent of outpatients seen in general medical practice are suffering from problems related to addiction. (3)

Chemical dependence is a leading cause of morbidity and death in the United States. At least 20% of patients seen by primary care physicians in both the outpatient and inpatient setting are chemically dependent. Up to 90% of these patients go undiagnosed by their primary physicians. Chemical dependence is defined as a chronic, progressive illness characterized by the repeated and persistent use of alcohol or drugs despite negative health, family, work, financial, or legal consequences. Primary care physicians are in an ideal position to detect chemical dependence at its earliest stages, when irreversible medical consequences and death are most likely preventable. (6)

Many professional medical societies including the American Psychiatric Association, American Academy of Pediatrics, and the American College of Obstetrics and Gynecology have adopted policies that call upon physicians to be knowledgeable, trained, and involved in prevention, screening, and intervention for SUDs. American Medical Association (AMA) policy encourages all physicians, particularly those in primary care, to be educated in all phases of intervention with this

patient population. All physicians should understand the medical and psychiatric co-morbidities and complications of SUDs (including use of multiple drugs). Physicians should be prepared to meet the ongoing medical needs of this patient population. (2)

The personal health beliefs and practices of physicians may affect their care of patients with SUDs. A national survey of physicians found that those who had directly encountered problems with alcohol or other drugs (through friends or family members) were more likely to screen, diagnose, and conduct brief interventions for SUDs, than physicians who had not had such direct experiences. (3)

Physicians may lack an understanding of the health care cost savings associated with treating patients with SUDs. Two randomized control trials in the USA demonstrated that each dollar spent in intervention realized a future health care cost savings of \$4.30 and a \$3.80 reduction in medical costs. (7,8) The Partnership for Prevention found that the annual medical cost of service for problem drinking screening and brief counseling was only \$8.00 per year. (2)

The American Medical Association and the National Institute on Drug Abuse (NIDA), each recognized the need to better educate primary care physicians about substance abuse research and clinical practice. The ultimate goals are to raise primary care physicians' awareness of drug addiction as a health problem and to facilitate dissemination of knowledge to prevent and diagnose abuse. (2)

In Arabian Gulf countries, there is converging evidence that patients with a variety of psychiatric problems visit primary care physicians for treatment. Mental health has been now integrated into primary health care in many countries, developed as well as developing countries. (9)

Patients with substance abuse problems are common in general medical practice and include people

of all ages and socioeconomic groups; initial diagnosis and treatment of addiction problems are often done by the primary care practitioner before referral to a specialist .(10)

Methodology

Study Area:

Jeddah is the second largest city in Saudi Arabia. The study area is more than 1,500 square kilometers and population is more than three million. There are 40 Primary Health Care Centers (PHCCs) in which 140 primary care physicians are working. There are two hospitals: Al Amal Hospital which takes care of the male patients of Addictive Substances and the Psychiatry Health Hospital for female patients.

Study Design:

Cross- sectional study.

Study Population:

All primary care physicians working in primary health care centers in Jeddah, Saudi Arabia-2008.(N=140).

Inclusion Criteria:

All primary care physicians working in primary health care centers in Jeddah who were available at the time of the study.

Exclusion criteria:

Dentists were excluded.

Sampling:

All primary care physicians working in Jeddah Governorate were invited to be enrolled in the study, and accounted for 110 physicians.

Data collection tool:

The questionnaire was adopted and modified from Dr. Al-Haqwi's study (16) which was done in 1995 by Dr. Ali Al-Haqwi, to assess the knowledge and attitude of Primary Health Care (PHC) physicians about commonly abused drugs in the community. It consists of 5 questions for socio-demographic variables such as age, gender, nationality, qualification, and number of years of experience, and contained 28 questions on knowledge about substance abuse and dependence. There were 2 questions on attitude

of primary care physicians about commonly abused drug in the community. One question enquired as to if the PHC physicians needed more educational courses about drug abuse problems and one question enquiring as to if primary care physicians think that they are knowledgeable about substance abuse and dependence.

Variables:

The dependent variables are Substance abuse and Dependence Perception, Knowledge and Educational need; Independent variables are age, gender, nationality, qualification, and number of years of practice.

Data collection technique:

The main tool of the study was a self administered questionnaire and was distributed by the researcher during working hours at a time when the clinics were not over-crowded, then the questionnaire was collected by the researcher to increase the response rate and to save time. All data was collected by hand and checked for any missing data, then coded for entry.

Data entry and analysis:

Data was entered onto personal computer by the researcher and analyzed using SPSS version 14. For descriptive analysis, frequency and Standard Deviation were illustrated and for comparing the differences of the parametric variables among the subgroups of the study, t student test and ANOVA were used for comparing two or more subgroups respectively. Also Chi Square test was conducted for comparing the differences in the frequencies of categorical variables. P value less than 0.05 was considered an indication for significance throughout the study.

Pilot study:

Ten physicians from the National Guard primary health care center were recruited for a pilot study to ensure feasibility and no ambiguity of the questionnaire, and they were not included in the study. No modifications were applied on the questionnaire as it was proven that it was feasible and clear.

Ethical considerations:

Written permission to Authorities in the PHCC in Jeddah Governorate was sent for approval to conduct the research. Questionnaires were given to physicians with personalized covering letter and confirming confidentiality of data.

Limitation:

Time allowed to collect data will be considered as an expected limitation.

Budget:

Self funded.

Results

One-hundred and ten (110) physicians were included in the study, and they were asked to fill in a pre-designed self administered questionnaire prepared to achieve the study's objectives. The results section was comprised of 4 parts:

1st part displays the socio-demographic characteristics of the study group.

2nd part describes knowledge of the physicians about Substance abuse and Dependence.

3rd part shows the clinical experience of the physicians regarding abuse.

4th part demonstrates the perspectives and preferences of the physicians about management strategies and their educational needs in the field of Substance abuse and Dependence.

1. Characteristics of the study group:

Table 1 (next page) shows the majority of the physicians working in the primary health care centers are aged <40 years (83.6%), and there was almost an equal proportion of males (50.9%) and females (49.1%). It was noted that the great majority of the physicians were Saudis (90.9%), and in total 15.5% of the physicians have postgraduate qualifications mostly from the Saudi board (5.5%) and Arab board (6.4%). As expected according to the distribution of the physicians in age groups, the majority of them (82.7%) have experience <10 years.

Socio-demographic Characteristics	No.	%
Age (years):		
<30 years	41	37.3
30-39 years	51	46.4
40+ years	18	16.4
Gender:		
Males	56	50.9
Females	54	49.1
Nationality:		
Saudi	100	90.9
Non Saudi	10	9.1
Qualifications		
MBBS only	93	84.5
Saudi board	6	5.5
Arab board	7	6.4
MRCOG	2	1.8
Master in community child health	1	0.9
Diploma	1	0.9
Experience in years:		
<10 years	91	82.7
10+ years	19	17.3

Table 1:- Characteristics of the physicians included in the study (n=110)

Socio-demographic Characteristics	Mean score	SD	p*
Age (years):			
<30 years	7.87	1.68	0.840
30-39 years	7.92	1.67	0.840
40+ years	7.64	1.96	0.840
Gender:			
Males	7.77	1.66	0.601
Females	7.94	1.77	0.601
Nationality:			
Saudi	7.75	1.66	0045
Non Saudi	8.88	1.99	0045
Qualifications			
MBBS	7.80	1.70	0.453
Postgraduates	8.33	1.51	0.453
Years of experience			
<10 years	7.95	1.68	0.117
10) years	7.37	1.81	0.117

Table 2: Knowledge scores of the physicians about the signs and symptoms suggesting substances/drug abuse according to their characteristics.

2. Knowledge of the physicians about Substance abuse and Dependence.

2.1 Knowledge of the physicians about signs and symptoms suggesting Substance abuse and Dependence.

Figure 1 (opposite page) displays the response of the physicians to the items that make them suspicious about the presence of substance abuse/dependence among their patients. It was evident that almost all the physicians (95.5%) agreed about the presence of multiple punctures in the body of their patients triggering their suspicion about patients being substance abusers/dependent, and 93.6% indicated that they suspect abuse if their patients insist on substance use despite having social, psychological or physical problems. Similarly it was noted that the great majority of the physicians (90.9%) pointed out that the gradual deterioration in social and/or school performance of the patients makes them suspect substance abusers/dependent. Unexpectedly, it was noticed that 20% of the physicians indicated that the gradual improvement in the general health of the patients is considered as one indicator that makes them suspect presence of substance abuse/dependence.

Table 2 describes the mean score for the correct answers about the signs and symptoms suggesting the presence of substances/drug abuse according to their characteristics (On a scale of 0-10). The Table shows that there was a slight non-significant difference in the mean score of the correct answers of the physicians according to their age group and gender $p>0.05$. Nevertheless, it was observed that the scores recorded among Non Saudi physicians (Mean, SD =8.88, 1.99) was significantly higher than that among Saudi physicians (Mean, SD =7.75, 1.66) $p<0.05$. Meanwhile, it was observed however, that although the postgraduates had higher scores (Mean, SD =8.33, 1.51) than those who had MBBS only (Mean, SD =7.80, 1.70) this difference is not statistically significant $p>0.05$.

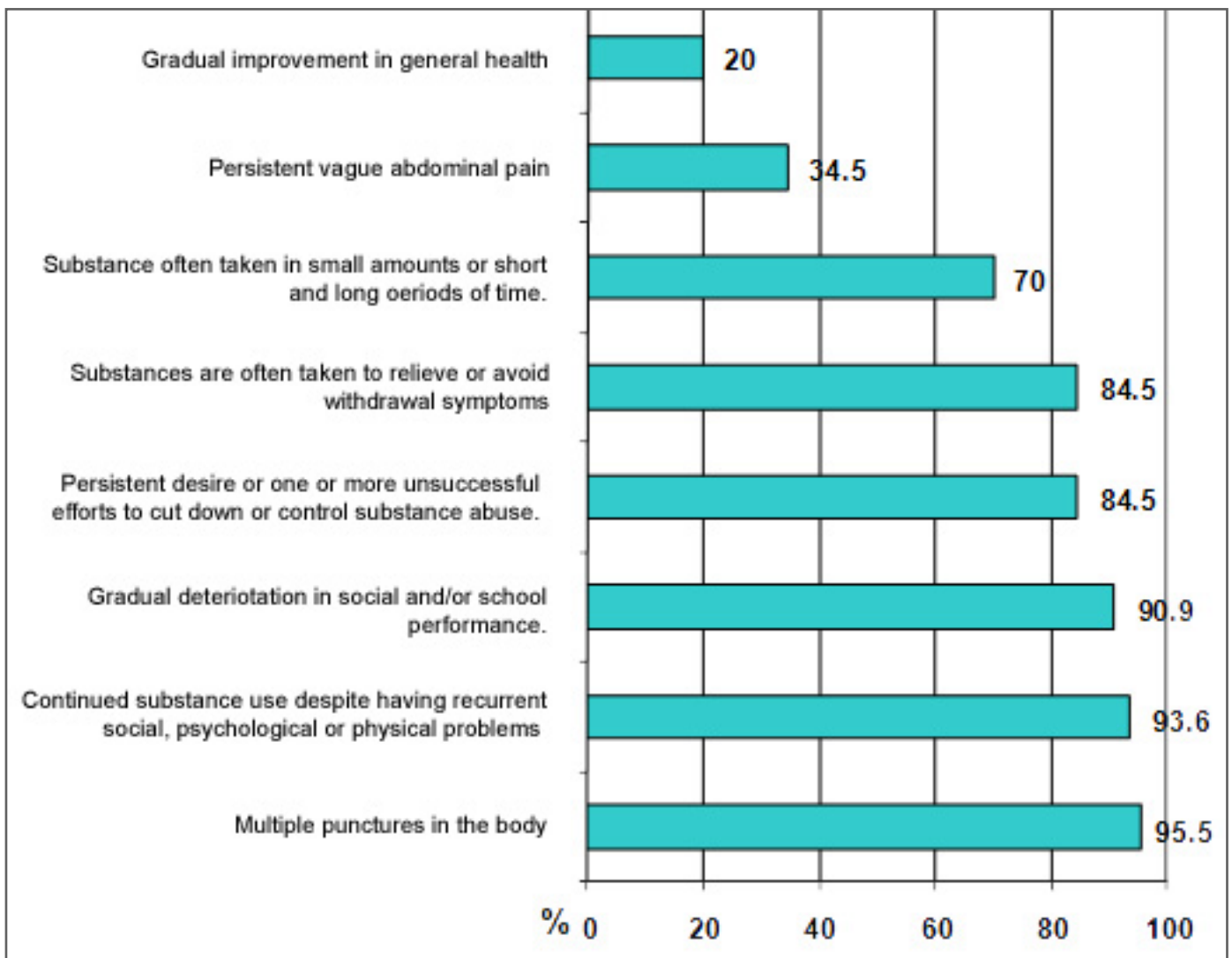


Figure 1:- Perspectives of the physicians about symptoms and signs that trigger suspicion about substance abuse/dependence among patients

Characteristics of the substances/drug abusers	No.	%
Age (years):		
<15 years	4	3.6
15-30 years	86	78.2
31-45 years	17	
>45 years	3	
Gender:		
Males	108	
Females	2	

Table 3: Characteristics of the substance/drug abusers as described by the physicians

2.2 Knowledge of the physicians about characteristics of substances/drug abusers in the community.

Table 3 shows the perspectives of the physicians about the characteristics of substance/drug abusers in the community. It shows that the majority of the physicians (78.2%) indicated that substance/drug abusers lie mainly in the age group (15-30 years), while 3.6% of the physicians pointed out that

substance/drug abusers lie mainly in the young age groups (<3.6%) and 2.7% indicated that they are mainly in the older age group (>45 years).

2.3 Knowledge of the physicians about the presence of the problem of abusing substances/drugs in the community.

Figure 2 (next page) displays the response of the physicians to the question that reflects their knowledge

about the presence of substance/drug abuse in the community. It is evident that almost two thirds of the physicians (60.9%) strongly agree in addition to 31.8% who agree that this problem exists in the community. On the other hand, only a minority (5.4%) disagree about the notion of the presence of substance/drug abuse.

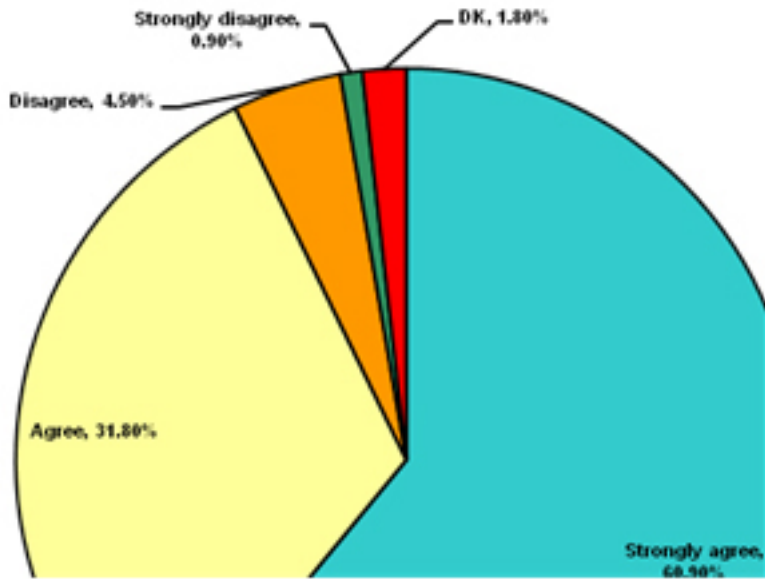


Figure 2: Perspectives of the physicians about the presence of the abusing of substances/drugs problem in the community

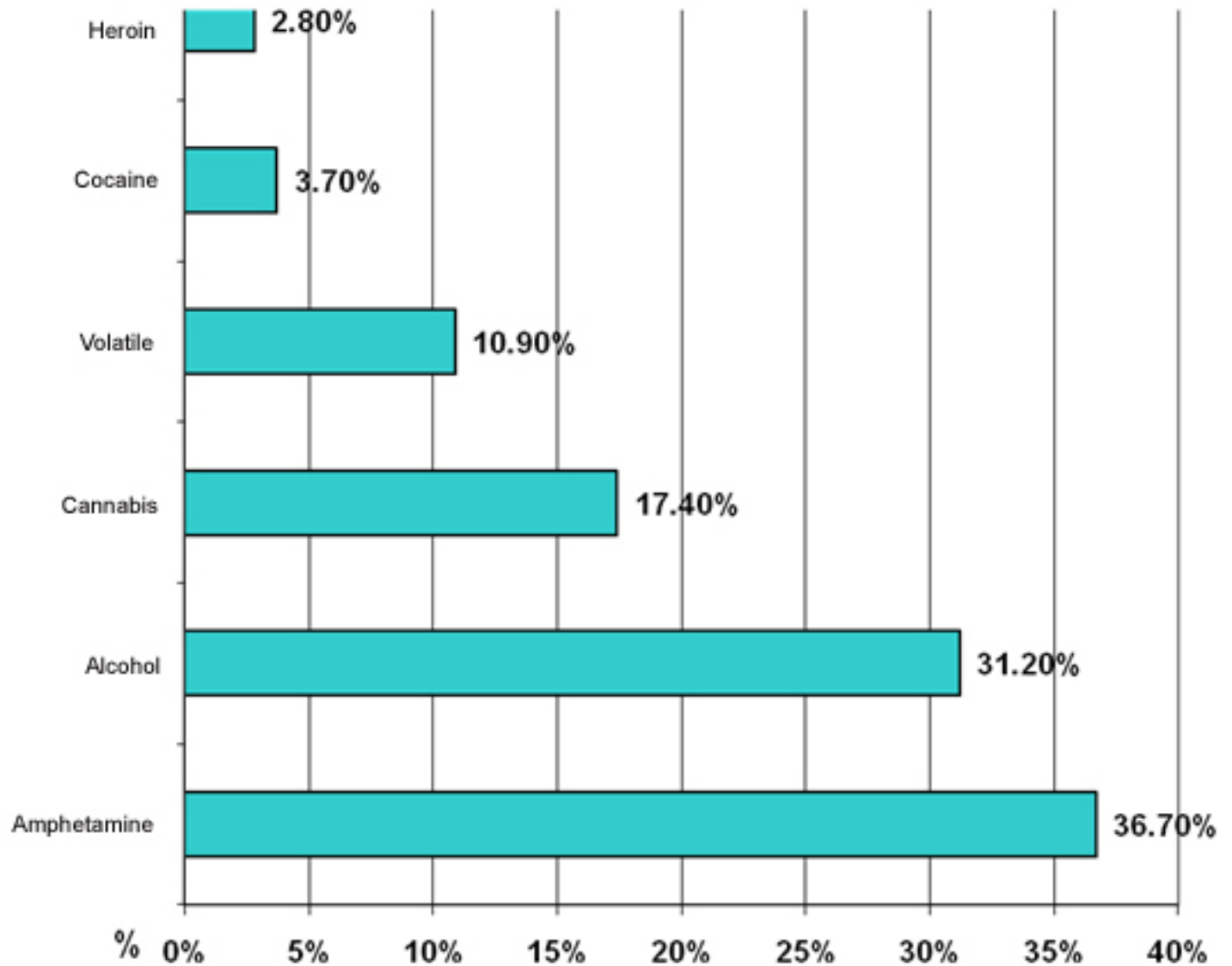


Figure 3: Abused substances and drugs (arranged in descending order)

2.4 Commonly abused substances/drugs as indicated by the physicians

Figure 3 (opposite page) shows the commonly abused substances and drugs as indicated by the physicians. Almost one third of the physicians (36.7%) indicated that the commonest abused substance is Amphetamine, and 31.2% pointed out that the commonest is Alcohol. Meanwhile it was found that a minority of the physicians indicated that the commonly used substances are Cocaine (3.7%) and Heroin (2.8%).

2.5 Knowledge of the physicians about the signs and symptoms suggesting tolerance

Characteristics of the physicians	Right answer	Wrong answer	p*
Age (years)			
<30 years	26(63.4%)	15(36.6%)	0.504
30-39 years	38(74.5%)	13(25.5%)	0.504
40+ years	12(66.7%)	6(33.3%)	0.504
Gender			
Males	36(64.3%)	20(35.7%)	0.267
Females	40(74.1%)	14(25.9%)	0.267
Nationality			
Saudi	66(66.0%)	34(34.0%)	0.020
Non Saudi	10(100.0%)	-	0.020
Qualifications:			
MBBS	63(67.7%)	30(32.3%)	0.474
Postgraduates	13(76.5%)	4(23.5%)	0.474
Years of experience:			
<10 years	66(72.5%)	25(27.5%)	0.088
10) years	10(52.6%)	9(47.4%)	0.088
Grand total percentages	69.1%	30.9%	

*Based on Chi square

Table 4: Knowledge of the physicians about the signs and symptoms suggesting tolerance according to their characteristics

Characteristics of the physicians	Right answer	Wrong answer	p*
Age (years)			
<30 years	17(41.5%)	24(58.5%)	0.033
30-39 years	35(68.6%)	16(31.4%)	0.033
40+ years	10(55.6%)	8(44.4%)	0.033
Gender			
Males	33(58.9%)	23(41.1%)	0.581
Females	29(53.7%)	25(46.3%)	0.581
Nationality			
Saudi	58(58.0%)	42(42.0%)	0.223
Non Saudi	4(40.0%)	6(60.0%)	0.223
Qualifications:			
MBBS	51(54.8%)	42(45.2%)	0.451
Postgraduates	11(64.7%)	6(35.3%)	0.451
Years of experience:			
<10 years	50(54.9%)	41(45.1%)	0.511
10) years	12(63.2%)	7(36.8%)	0.511
Grand total percentages	56.4%	43.6%	

*Based on Chi square

Table 5: Knowledge of the physicians about alcohol withdrawal according to their characteristics

Table 4 (previous page) shows the answers of the physicians about the signs and symptoms indicating likelihood of tolerance. Almost two thirds of the physicians (69.1%) gave the right answer. It was obvious that a slightly higher percentage of the physicians in the age group (74.5%) gave the right answers if compared to their older and younger fellows, however this difference is not statistically significant $p>0.05$. Similarly, it was found that the percentage of female physicians who gave the right answers (74.1%) was higher than that for males (64.3%), however it is not statistically significant $p>0.05$. Nevertheless, it was remarked that all the non Saudi physicians pointed out that tolerance is not diagnosed on development of a substance-specific syndrome due to the cessation or reduction in substance use which is the correct answer if compared to 66% of the Saudi physicians, and this difference is statistically significant $p<0.05$. Regarding years of experience it was found that although the percentage of physicians who gave the right answer was higher among those who had postgraduate qualifications, and those who had 10+ years of experience than their matching fellows, nevertheless, this difference is not statistically significant $p<0.05$.

2.6 Knowledge of the physicians about alcohol withdrawal

Table 5 (previous page) demonstrates the answers of the physicians to the question that reflects their knowledge about alcohol withdrawal. It was remarked that almost half of the physicians (56.4%) knew the correct answer about the symptoms which are not a characteristic of alcohol withdrawal (excessive sleep). The percentage of physicians in the age group (30-39 years) who gave the correct answer was significantly higher (68.6%) than their older and younger colleagues $p<0.05$. Meanwhile it was noticed that the percentage of those who gave the correct answer was higher among males (58.8%), Saudis (58%), postgraduates (64.7%), than those who had 10+ years of experience (63.2%) and if they are compared with their matched groups, however, these differences are not statistically significant $p>0.05$.

2.7 Knowledge of the physicians about opiate intoxication.

Characteristics of the physicians	Right answer	Wrong answer	p*
Age (years)			
<30 years	15(36.6%)	26(63.4%)	0.008
30-39 years	35(68.6%)	16(31.4%)	0.008
40+ years	11(61.1%)	7(38.9%)	0.008
Gender			
Males	30(53.6%)	26(46.4%)	0.686
Females	31(57.4%)	23(42.6%)	0.686
Nationality			
Saudi	56(56.0%)	44(44.0%)	0.484
Non Saudi	5(50.0%)	5(50.0%)	0.484
Qualifications:			
MBBS	52(55.9%)	41(44.1%)	0.821
Postgraduates	9(52.9%)	8(47.1%)	0.821
Years of experience:			
<10 years	48(52.7%)	43(47.3%)	0.211
10) years	13(68.4%)	6(31.6%)	0.211
Grand total percentages	55.5%	44.5%	

*Based on Chi square

Table 6: Knowledge of the physicians about opiate intoxication to their characteristics

Table 6 illustrates the response of the physicians to the question that reflects their knowledge about opiate intoxication. It shows that almost half of the physicians (55.5%) knew the correct answer about the symptoms which are not a characteristic of opiate intoxication (lacrimation, rhinorrhea and diarrhea). It was observed that the percentage of physicians in the age group (30-39 years) who gave the correct answer (68.6%) was significantly higher than their older and younger colleagues $p<0.05$. Meanwhile it was noticed that the percentage of those who gave the right answer was higher among females (57.4%), Saudis (56%) physicians who had MBBS only (55.9%), those who had 10+ years of experience (68.4%) if they are compared with their matched groups, however, these differences are not statistically significant $p>0.05$.

3. Clinical experience of the physicians regarding substance/drug abuse

3.1 Substance/drug abusers seen at the primary health care clinics as indicated by the physicians.

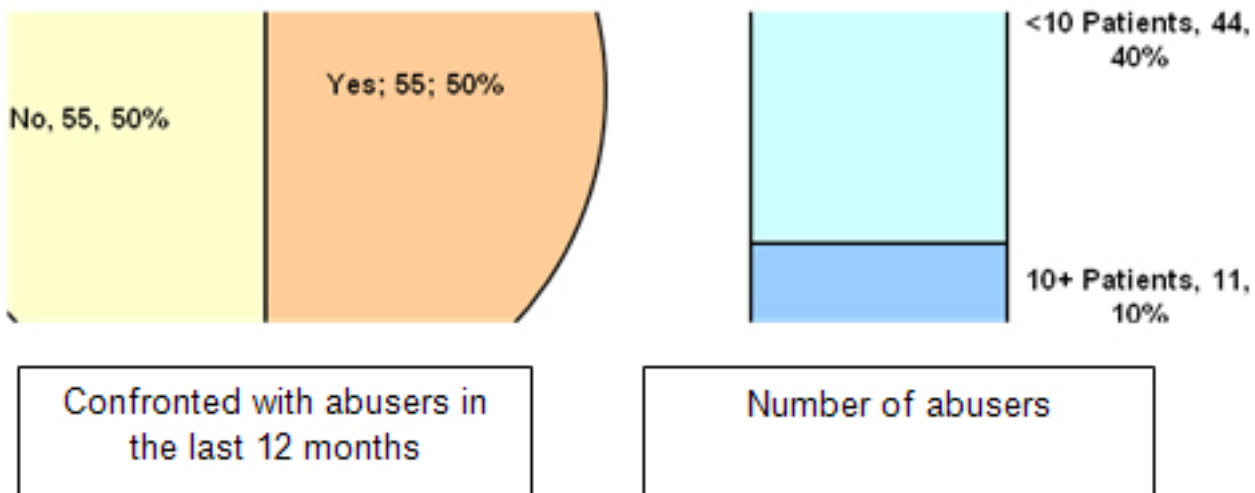


Figure 4: Abusers seen at the clinics in the last 12 months as indicated by the physicians

Figure 4 displays the abusers seen in the primary health care centers in the previous 12 months. It shows that half of the physicians indicated that they were confronted with substance/drug abusers in their clinic during the previous year. It was found that 10% of the physicians were confronted in their clinics with 10 or more abusers, and 40% saw less than 10 patients in their clinics.

4. Management of substance/drug abusers at the primary health care centers as indicated by the physicians.

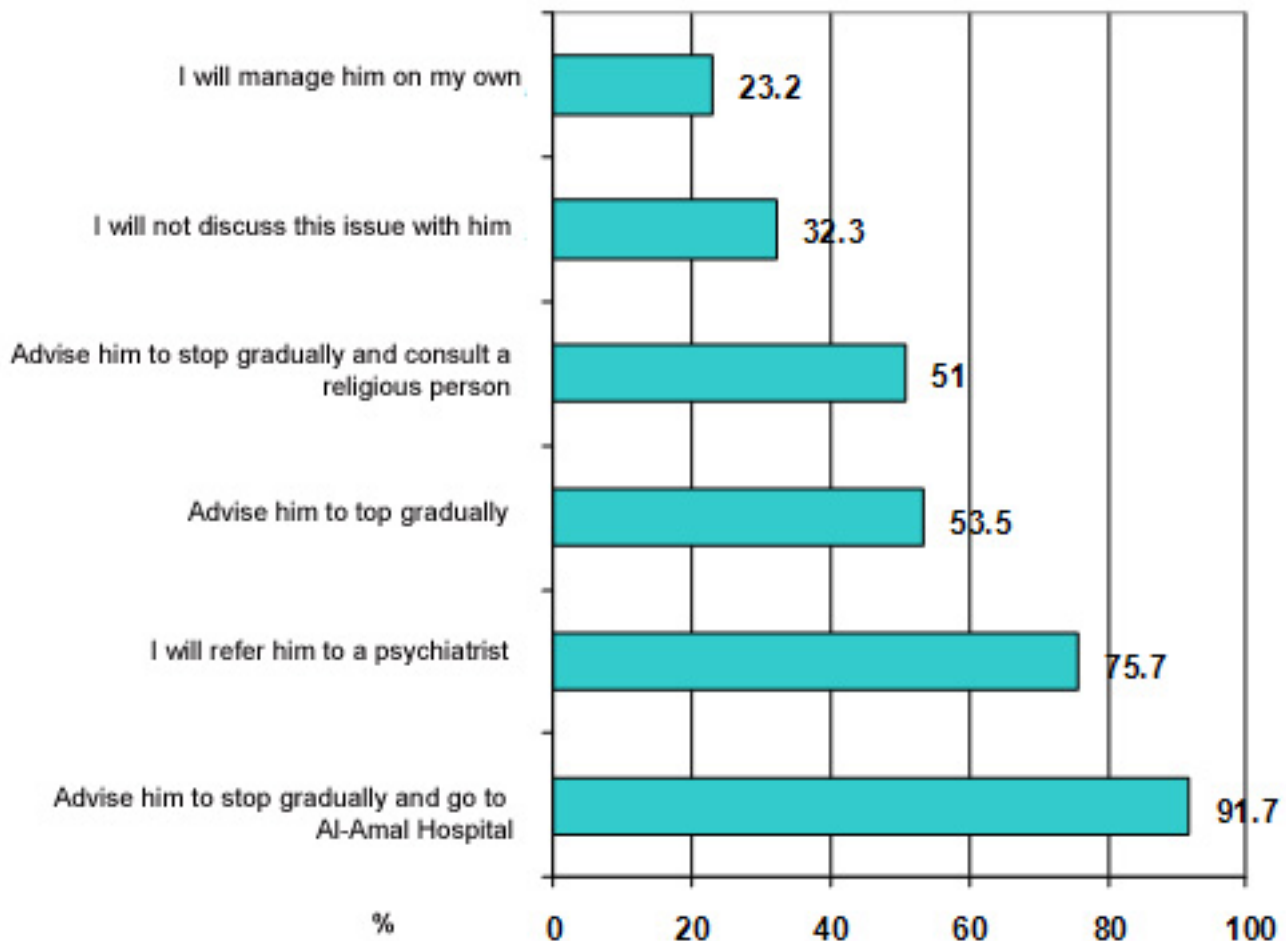


Figure 5: Management of substance/drug abusers as according to the preferences of the physicians

Figure 5 (previous page) demonstrates the preferable actions taken by the physicians when confronted with substance/drug abusers in their clinics. It was obvious that the great majority of the physicians (91.7%) would advise the abusers to stop gradually and refer them to Al-Amal hospital, moreover, three quarters of the physicians (75.7%) pointed out that they would refer them to psychiatrists. Only about one quarter of the physicians (23.2%) replied that they would manage the abusers at their clinics by themselves.

4.1 Preferences and opinion of the physicians about substance/drug abuse management.

Management	Qualifications		p*
	MBBS	Postgraduates	
Refer him to a psychiatrist			
Yes	63(73.3%)	15(88.2%)	0.157
No	23(26.7%)	2(11.8%)	0.157
Advise him to stop gradually			
Yes	43(52.4%)	10(58.8%)	0.417
No	39(47.6%)	7(41.2%)	0.417
Advise him to stop gradually and consult a religious person			
Yes	40(48.2%)	11(64.7%)	0.215
No	43(51.8%)	6(35.3%)	0.215
Advise him to stop gradually and to go to Al-Amal Hospital			
Yes	85(93.4%)	14(82.4%)	0.149
No	6(6.6%)	3(17.6%)	0.149
Would discuss the issue with him			
Yes	28(35.4%)	3(17.6%)	0.155
No	51(64.6%)	14(82.4%)	0.155
I will manage him on my own			
Yes	21(25.6%)	2(11.8%)	0.182
No	61(74.4%)	15(88.2%)	0.182

*Based on Chi square

Table 7: Preferences of the physicians in management of substance/drug abusers according to their qualifications

Table 7 describes the preferable ways of management of the substance/drug abusers as indicated by the physicians according to their qualifications. It was noted that the percentage of physicians who had postgraduate qualifications was higher than those who had MBBS only in the ways of management including the referral to psychiatrists (88.2% Vis 73.3%), advise the abusers to stop gradually (58.8% Vis 52.4%), advise and consult a religious person (64.7% Vis 48.2%). On the other hand the percentage was higher among physicians with MBBS than those who had postgraduate qualifications in other ways of management including advising the abusers to stop gradually and refer him to Al-Amal hospital (93.4% Vis 82.4%), discussing the issue with the abusers (35.4% Vis 17.6%) and managing the abusers by themselves (25.6% Vis 11.8%). Nevertheless it was evident that these differences were not statistically significant $p>0.05$.

4.2 Perspectives about the sites that should manage substance/drug abusers.

Figure 6 (opposite page) illustrates the perspectives of the sites that should manage the substance/drug abusers. It is evident that the majority (70.5%) suggested that the general hospital should be included in the responsibility of managing the abusers. Also, about two thirds of the physicians (63.9%) indicated that the PHC should be included as well. On the other hand, it was noticed that half of the physicians agreed that management of the abusers should be limited to specialized centers.

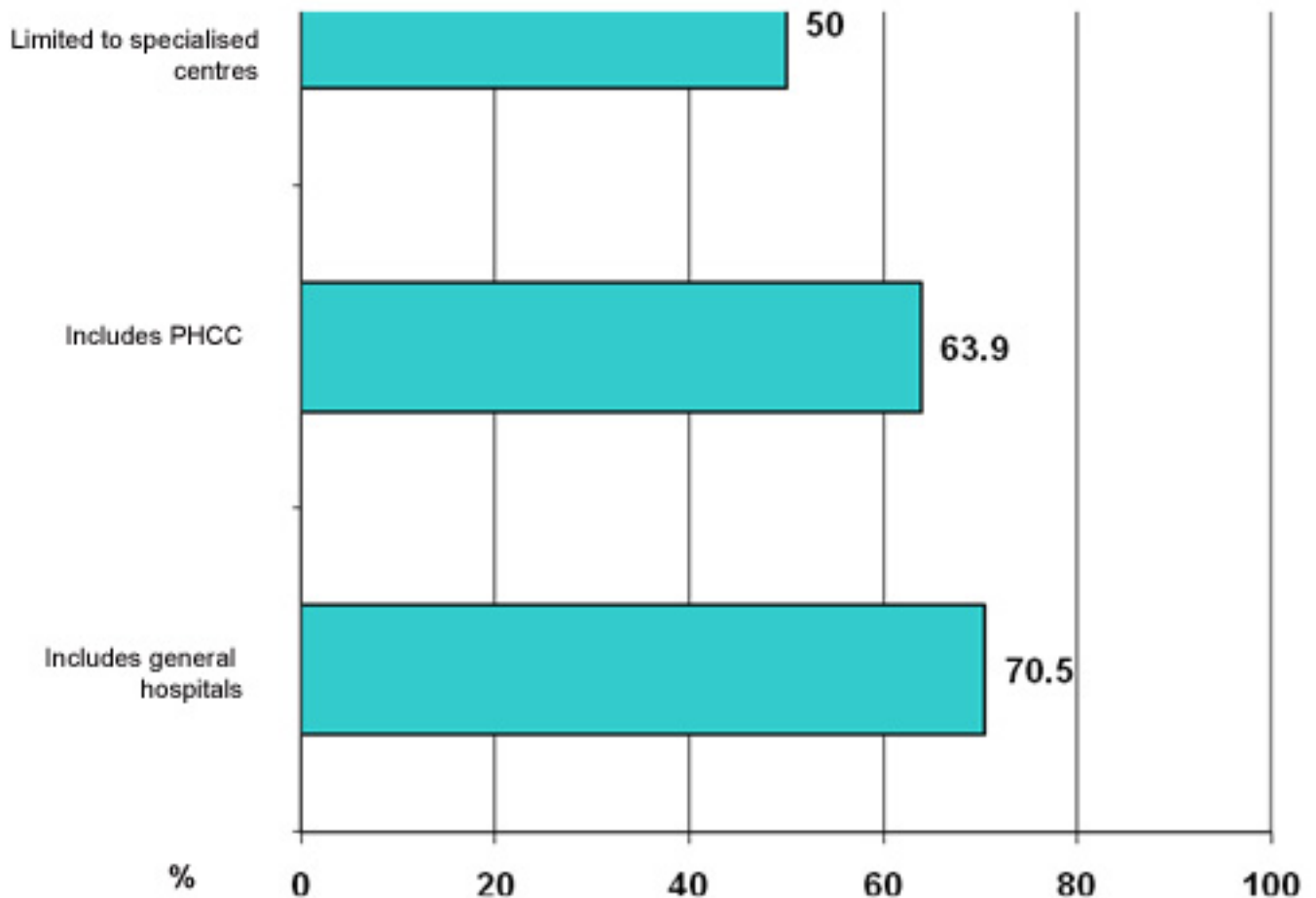


Figure 6: Perspectives of the physicians about the sites that should manage the substances/drugs abusers

4.3 Perception of the physicians about the level of knowledge of the PHC centers about substance/drug abuse and dependence

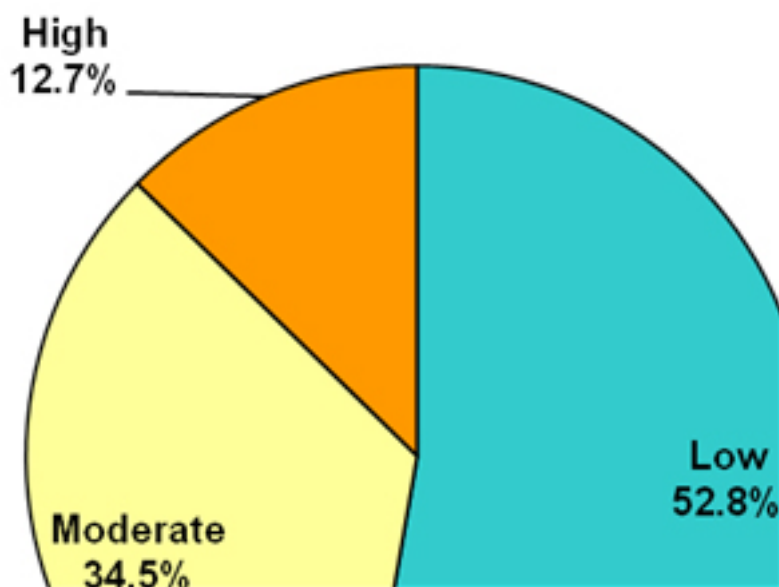


Figure 7: Perception of the physicians about the level of knowledge of the PHC centers about substance/drug abuse and dependence.

Figure 7 demonstrates the perception of the physicians about the level of knowledge of the PHCC's physicians about substance/drug abusers. It was remarked that half of the physicians in the study (52.8%) perceive that the knowledge of the physicians in the PHCs is low, while 34.5% indicated that it is moderate and 12.7% suggested that it is high.

4.4 Levels of agreement about the need of the PHC center' physicians to attend educational courses about substance/ drug abuse and dependence

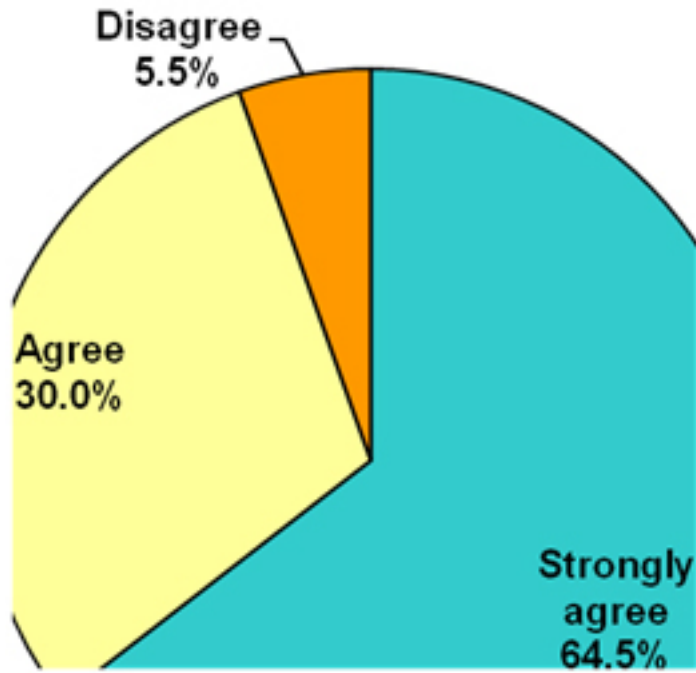


Figure 8: Opinion about the need of the PHCs' physicians to attend educational courses about substance/ drug abuse

Figure 8 shows that the great majority of the physicians in the study (94.5%) indicated that they agree or strongly agree that the physicians in the primary health care centers have need for educational courses about the substance/drug abuse.

Discussion

The current study was aimed at evaluating substance abuse and abuse behavior awareness of primary care physicians working in (MOH) primary health care centers in Jeddah, Saudi Arabia-2008, and to find out their educational needs pertinent to recognition and management of substance/drug abusers.

As a rule, physicians in primary health care need a better understanding of the prevalence of health and health related problems including alcohol and drug dependence in a variety of populations, along with increased awareness of the economic impact of addictive illnesses on the society. (24) In the current study, in order to elaborate the perception of the physicians about the spread and magnitude of substance/drug abusers, they were asked if they

think that it is a problem in the community. The answers revealed that almost two thirds (60.9%) strongly agreed that it exists in the community. Similar findings were reported in a study conducted in Riyadh where it was revealed that 69% of PHC physicians perceived that substance abuse is a common and expanding problem. (16)

As regards the abused drugs and substances, the study showed that the commonly abused substances and drugs as indicated by the physicians were Amphetamine, and Alcohol, while a minority of the physicians indicated that the commonly used substances are Cocaine (3.7%) and Heroin (2.8%). The findings of the current study were partly in accordance with the findings of the study conducted in Riyadh where the physicians suggested that the commonly used substances were: alcohol, amphetamines, volatile substances and heroin. (16) These findings are partly supported also by the results of the study that was conducted earlier in Riyadh to assess relapse among abuser patients, where it was found that the commonly used substances were Alcohol, sedatives, heroin, hashish (cannabis) and glue-sniffing. (18)

Regarding knowledge of the physicians that empowers their ability to recognise abusers among their attendants in the clinical sessions, Fridell (2008) stated that mixed findings have been made with regard to the long-term predictive validity of antisocial personality disorder (ASPD) in samples of substance abuser and it was ascertained that it has high predictive validity of diagnosis and should be taken seriously in drug abusers.(25) In our study, and what can be evaluated as having reasonable knowledge, it was found that the great majority of the physicians (90.9%) pointed out that the deterioration in social and/or school performance of the patients makes them suspect substance abuse/dependence.

While findings of the current study showed that half of the physicians in the primary health care centers were confronted with substance/drug abusers in their clinic in the previous year, nevertheless, only 10% of them addressed that the number of abusers seen along the previous year was 10 or more abusers, and the overwhelming percentage (90%) of those who were confronted with abusers articulated that the number of abusers seen in the previous year was less than 10 patients, and

provided that the annual number of PHCCs attendees is around million, (26) means that the abusers form a negligible portion of the patients attending primary health care centers in Jeddah. These findings were almost in agreement with what was found in the study which was conducted in Riyadh for the same purpose where it was cited that only 23% of the physicians have actually seen a substance abuser in the last 12 months in their practice; and the prevalence rate of abusers accounted for (1/1000). (16) These figures reported in both Jeddah and Riyadh were very far behind what was recorded in USA, where it was reported that at least 20% of patients seen by primary care physicians in both the outpatient and inpatient setting are chemically dependent, (6) and what was reported in a study conducted in Ireland where it was found that one in four (28%) of those attending hospital emergency departments have substance abuse-related injury/illness and one in eight (13%) present in a state of clinical intoxication. (27) In addition, the figures recorded in Jeddah and Riyadh were relatively lower than what was found in a study conducted in Iran where their physicians indicated that the weekly mean number of abusers was 12 abusers and 38% percent of GPs reported seeing more than five substance using patients per week, while 2% said they have no substance using patients; and the rest had been confronted with substance abusers. (15) These differences could be attributed to the variation between different communities in their views, values, regulations and punitive rules for drug and substance abuse.

Regarding management of substance/drug abusers in the primary health care centers it was remarked that there was a gap between knowledge about the signs and symptoms suggesting abuse from one side and the confidence about ability to manage cases of abuse on the other hand, as the study showed that while the majority of the physicians had a reasonable level of knowledge, nevertheless only about one quarter of the physicians (23.2%) replied that they would

manage the abusers at their clinics by themselves, and the rest preferred to refer them. These findings were in accordance with what was found in the study conducted in Riyadh where it was cited that most of the physicians underestimated the role of the PHC system in the management of substance abuse.(16) Also, the same findings were observed among physicians working in the emergency departments in Ireland, where it was reported that a particular knowledge deficit in relation to intervention strategies, for substances abusers was identified although they had a satisfactory level of knowledge, and this remark was explained by the lack of training courses pertinent to management of abusers. (20) The same claim was addressed in a study conducted also in Ireland which showed that despite the problem of abuse being very prevalent, nevertheless, the success rate in detecting these patients is however disturbingly low (25-50%) and as a result many substance use problems are misdiagnosed or remain undetected. (27) On the same line, and even for the matter of referral of the abusers, a study was conducted in USA which pointed out physicians' need for training and practice in referring patients to treatment teams, monitoring patients in recovery, and providing interventions that will eliminate or reduce substance abuse before it becomes addiction.(24)

Literature shows that most primary care physicians do not feel competent in treating alcohol- and drug-related disorders, generally. They do not like to work with these kinds of patients with these disorders and do not find treating them rewarding. (19) Currently, the study showed that the majority of our physicians in the primary health care centers perceive that their knowledge about dealing with drug and substances abusers is either low or moderate. This perception might reflect the deficient training curricula either in undergraduate or clinical phases. The same issue was observed also among the primary health care physicians in the USA which was explained by the notion that the curricula throughout all years of medical education lacks

sufficient instruction and experiences in addiction medicine, and it was stressed that programs that have successfully changed students' attitudes and skills for treatment of addicted patients continue to be exceptional and limited in focus rather than the general practice. (19)

On the brighter side, about two thirds of the physicians (63.9%) indicated that the PHC should be included as one of the health institutes that should care for abusers provided that they have adequate level of knowledge and skills that support their self confidence. The reviewed literature revealed that the main factors affecting the self confidence of physicians regarding their ability in dealing with substances and drug abuse were all related to training. (22) What looks optimistic and encouraging in our findings is that the great majority of the physicians (94.5%) indicated that they agree or strongly agree about the notion related to their need for educational courses about substance/drug abuse, as this perception would be reflected positively on their future achievements in the training courses.

Conclusion

The current study was conducted to assess knowledge, attitude and educational needs of primary health care physicians regarding substance/drug abuse. Although the magnitude of the problem in terms of expected prevalence was found to be very low in the community, if compared to other countries, a reasonable level of knowledge about the signs and symptoms suggesting abuse and dependence was detected among the physicians. Nevertheless, their confidence about their ability in the management of these cases was limited and they prefer to refer them to other specialized health institutes. What looked to be an encouraging perspective of the physicians was their agreement about the inclusion of PHC centers in the management of abusers, moreover, the overwhelming majority of them indicated that they are in need of training in the field of recognition and management of substance/drug abusers.

RECOMMENDATIONS:

From the findings of the current study it is strongly recommended:

- The substance/drug abuse and dependence related problems need to be properly integrated into the curriculum of medical schools and postgraduate studies with clear objectives to increase student's awareness about the relevance of substance/drug abuse in detection and prevention.
- The PHC centers need to be included in the management of the substance/drug abusers.
- Training courses for primary health care physicians regarding recognition and management of substance/drug abuse should be incorporated into a continuous medical education program.
- A simplified screening check list for detection of substance/drug abusers should be created and added to the general check up list forms present in family files, especially for adult individuals.
- Further research needs to be done to identify and prioritize substance/drug abuse problems in the Saudi community through screening and assessment to increase awareness.

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Knowledge, Expectations and Satisfaction Survey of Patients with Low Back Pain in a Family Practice Clinic at a Teaching Hospital, in Karachi

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Abstract

Introduction: “Non-specific LBP” is the term used when an organic etiology is less likely. Consequently, patient’s satisfaction has emerged as a critical outcome measure in health care services and clinical research. When patients are satisfied with the physician they are more likely to comply with treatment. Mismatch between patient’s expectation and the services received is related to a decrease in satisfaction. It has been shown that there are areas of patient’s dissatisfaction, which need to be addressed in order to improve the quality of care.

Methods: A cross-sectional survey was conducted. A total of 303 patients with low back pain attending the Family Practice Clinics at Aga Khan University Hospital over

a period of 3 months, were interviewed . This represented an overall participation rate of about more than eighty percent (80%).

Results: Although the expectations of patients from their Family Physicians is found to be low (less than 50%), but surprisingly a majority (75%) of patients are satisfied with the attitude demonstrated by their Family Physicians and a large majority (93%) with the follow-up appointment agreed with them, and more than 70 % understood and remembered what their Family Physicians explained to them about their diagnosis. A substantial number of patients felt that their Family Physicians give them enough time (66%) during consultation.

Conclusion: A high level of satisfaction is found among patients of family physicians with regard to low back pain in this Family Practice Center. Although there are also some deficiencies observed, in which less than half of patients were encouraged to ask questions and told what to do if help is required before next follow-up visit. It is the Primary care physician that the patients will always return to if they are not satisfied with management of low back pain. Furthermore it is in a doctor’s own best interest to maintain the status quo and not to challenge the patient’s attribution of cause or affect in non-specific LBP.

Key words: Expectation, Family Physicians, Knowledge, Low Back Pain, Satisfaction, Survey.

Introduction

Low Back Pain (LBP) is defined as pain, muscle tension, or stiffness localized below the costal margins and above the inferior gluteal folds, with or without leg pain. It affects mostly young adults between the ages of 30 and 50 years (1). LBP has been identified as a major barrier to improving the health of the nation, with 15-20% of people suffering at any given time (2). Following LBP varying intensity of functional disability is suffered by the patients. (3) It is recommended that primary care physicians need to maintain a high index of suspicion for spinal cord compression and try to prevent major morbidity by proper history and medical examination. (4)

Several epidemiological studies reported in the past showed that most back pain patients seek health care services first in the primary care setting, but after two months a large proportion of these patients continue to have significant pain related worries (5).

“Non-specific LBP” is the term used when an organic etiology is less likely. Consequently, patient satisfaction has emerged as a critical outcome measure in health care services and clinical research (6). When patients are satisfied with the physician they are more likely to comply with treatment (7).

Mismatch between patients' expectations and the service received is related to decreased satisfaction (8). It has been shown that there are areas of patients' dissatisfaction, which need to be addressed in order to improve the quality of care.

A need exists to document the knowledge and expectations of Family Practice patients with LBP; this will enhance the knowledge and expectations of the patients and will also reduce their suffering and improve satisfaction.

After a thorough literature search, it was found that no such work till now has been reported related to the LBP management in this part of the world. Also research available in Pakistan till now has little to say on the aspects

of knowledge, expectation and satisfaction of patients with low back pain in any family practice clinic or at any teaching hospital. This study will also highlight the skills needed by FPs in management of LBP in order to fulfill patients' expectations and satisfaction.

Patients and Methods

This cross-sectional study was conducted at the Community Health Center (CHC) of the Aga Khan University Hospital, Karachi, from July to December 2006. Adult patients between 21 and 55 years of age with low back pain were included. Patients with 'Red Flag Signs' (Thoracic pain, Fever and unexplained weight loss, Bladder or Bowel dysfunction, History of carcinoma, Ill health or presence of other medical illness, Progressive neurological deficit, Disturbed gait, saddle anesthesia) were excluded. Sample size was calculated as 303 and convenient sampling was used to distribute the questionnaire. Patients were asked during nursing assessment about presenting complaints, before being seen by family physician and hence those patients who were suffering from LBP were identified. Eligible subjects were referred to the Principal Investigator (PI) who gave them information regarding study objectives and informed consent was taken. Those who agreed to participate were included in the study. The PI conducted interviews by administering questionnaires to gather demographic data and also assessed knowledge, expectation and satisfaction on a pre-coded questionnaire. The estimated time period to complete a questionnaire was 10-15 minutes. All information collected was kept confidential.

Data was entered and analyzed in SPSS v 11.5 software. We reported the objectives of the study by using descriptive analysis. Mean and standard deviation were calculated for continuous variables, such as age. Frequencies and percentages were computed for categorical variables such as sex, educational status and marital status. Similarly frequencies and proportions were

used to report results on knowledge, expectation and satisfaction regarding LBP, which was recorded as yes, no, or unsure.

Results

Data from 303 patients who attended the community health center clinics for LBP, were interviewed. There was a higher proportion of females (n=255, 84.2%) in the total group of eligible patients with 15.8% (n=48) being males. The mean age of the patients with LBP was 32.8 ± 9.7 for males and 35.5 ± 10.6 for females (M \pm SD) with age range between 21-55 years. The majority of the patients (n=243, 80%) were married and 77% (n=234) were residents of Karachi. Regarding their education level 70% (n=213) were literate and 29% (n=90) were illiterate.

The percentage distribution of demographic factors in patients with LBP is shown in Table 1 (opposite).

Out of 303 respondents, a large proportion (n=281, 93%) believed that continuity of activity would lead to bodily harm while the majority of patients believed that the spine was the strongest part of their body (n=244, 80%), LBP is not related to any serious disease (n=235, 77%), they wanted to avoid exercise when they had LBP (n=231, 76%) and LBP does not settle by itself (n=194, 64%).

Almost half (n=153, 50%) believed that a slipped disc was not often the cause of LBP, and they were able to get on with normal activities with LBP.

Among the total number of patients with LBP majority (n=210, 70%) needed less than one day's bed rest when they had LBP.

Only a minority (n=110, 36%) expected their FP to do an X-ray Spine for them. The overall expectation of patients with LBP was regarding explanation about preventive measures, explanation about sitting/sleeping and back exercises, and explanations about working posture remained low (n=110, 30%). Almost 50% (N=158) expected to get reassurance from their health care provider about their LBP.

Demographic Factor	N	%
Sex		
Male	48	15.8
Female	255	84.2
Age (M±SD)		
	35.6	10.5
Education		
Illiterate	90	29.7
Can read or write	2	.7
Primary	30	9.9
Secondary	31	10.2
Metric	50	16.5
Intermediate/Diploma	44	14.5
Graduate	40	13.2
Post Graduation	16	5.3
Marital status		
Married	243	80.2
Not married	59	19.5
Divorced	1	0.3
Resident		
Karachi	234	77.2
Outside Karachi	69	22.8

Table 1: Percentage distribution of demographic factors of low back pain patients

Satisfaction	N	%
Satisfied with doctor's advice		
Yes	175	57.9
No	45	14.9
Unsure	82	27.2
Physician takes your back pain as serious		
Yes	191	63.2
No	26	8.6
Unsure	85	28.1
Physician gives enough time to you		
Yes	200	66.2
No	28	9.3
Unsure	74	24.5
Physician understands your problem correctly		
Yes	182	60.3
No	32	10.6
Unsure	88	29.1
You agree with follow-up appointment		
Yes	283	93.7
No	8	2.6
Unsure	11	3.6
You are informed what to do before next follow up		
Yes	119	39.4
No	101	33.4
Unsure	82	27.2

Table 2: Satisfaction of patients with LBP about treatment advice from Family Physicians

A large majority (n=283, 93%) of patients were satisfied with the follow-up appointment, and agreed with their FP. The majority (n=228, 75%) were satisfied with the warmth and respect demonstrated by their FP and more than 70% (n=216) understood and remembered what their FP explained to them about their diagnosis. (Table 2)

A substantial number of patients felt that their FP gave them enough time (n=200, 66%) during the consultation. In addition the majority (n=182, 60%) of FPs understood their problems correctly, felt satisfied with their involvement in treatment, felt they were given help to cope up with their LBP. While assessing the competency of FPs in dealing with LBP patients, it was observed that out of 263 satisfied patients the majority (n=182, 61%) found their FP very helpful in removing their LBP. (Table 3).

Satisfaction	N	%
Remembers about your diagnosis		
Yes	216	71.5
No	8	2.6
Unsure	78	25.8
Physician demonstrated warmth with you		
Yes	228	75.5
No	0	0
Unsure	74	24.5
Satisfied with your involvement in treatment		
Yes	207	68.5
No	15	5.0
Unsure	80	26.5
You were encouraged to ask more questions about your low back pain		
Yes	129	42.7
No	100	33.1
Unsure	73	24.2
You felt helped to cope with your back pain		
Yes	186	61.6
No	24	7.9
Unsure	92	30.5
You are satisfied with physician's competency in dealing with low back pain		
Yes	182	60.3
No	42	13.9
Unsure	78	25.8

Table 3: Satisfaction of patients with LBP about treatment advice from Family Physicians

Discussion

This exploratory study has uncovered a rich heterogeneity in patients perceptions of low back pain. In this study, knowledge, expectation, satisfaction and outcome measures most important to the patients, were assessed.

In reporting the knowledge about LBP, a large majority (n=281, 93%) believed that continuity of activity will lead to bodily harm and the majority (n=231, 76%)

believed they needed to avoid exercise when they had LBP. The major barriers to physical activity found in this study with LBP were consistent with previous research (9). The results from this in-depth study support the view that clinicians should identify avoidance of activity and/or fear of pain at the earliest stage of LBP if they want patients to return to, and increase the level of their physical activity. Clinicians should find out which activities patients avoid or are fearful of, and then tailor their advice and reassurance grounded in the patient's knowledge about LBP.

In this study, surprisingly, the majority (n=235,77%) of patients didn't believe that LBP is related to any serious diseases which is contrary to other studies in which most patients with LBP were worried about serious diseases.(10)

Regarding the expectations of patients about LBP from their FP, only less than half of patients were able to get some information. All these findings are similar to the findings of previous researchers in which "Explanation of problem" was probably the most frequent wish among primary care patients in general.(11)

This study reported a very high degree of patient satisfaction with FPs about their LBP. For example, the large majority were satisfied with follow-up appointments agreed to with their physicians at the end of consultation, the majority were satisfied with respect demonstrated by their physicians, their understanding and remembering their diagnosis, their involvement in treatment decisions, that enough time was given to them during consultation and their problem was taken up seriously by their FP.

Now when our findings were compared to studies reported elsewhere, we found very poor satisfaction with their health care providers, among patients. In one study reported in the past, patients were found not to be satisfied because they expected their FP to

communicate well but they failed to do so.(12) Therefore patients were very dissatisfied because of FPs' poor communication skills and failure to understand their problems(13). In another study patients expected to be treated with respect(14) and wanted to be listened to, but the treatment given didn't come up to their expectations because health care providers didn't listen and did not spend enough time with them (15).

No study mentioned access to care if the need arises before their scheduled appointment (16). Clinically, it was observed that LBP does not usually create interest or any innovation among health care providers and the progress in complementary therapies is largely welcomed as it offers possibilities for a multi-professional approach to care. (17)

Despite phenomenal technical improvements in health care, our patients may not feel they are doing better.(18) This discrepancy has driven the trend towards "patient-centered" medical practice.(19) So now patient satisfaction has become a critical factor in health care reforms.

Approximately half of the respondents considered quality of life to be one of the most important outcomes for them. This confirms the importance of outcomes in clinical research that measures how LBP affects patients' abilities to perform daily activities (i.e. Roland Morris and Sweaty Disability questionnaires),(20, 21) as well as scales addressing overall quality of life (i.e., SF-36 Health Survey and Coastal Ocean Observations Panel [COOP] questionnaires). (22-25)

In studies reported elsewhere, a high level of extensive diagnostics such as radiographs were expected by the patients, but in our study only 40% of patients with LBP expected radiograph request from their FP. (26)

One of the major reasons of obtaining a high level of satisfaction among Family Physicians working in this teaching hospital, is their active

involvement in continued medical education, attending workshops, courses on communication skills, consultation styles and going through a process of continuous evaluation by their peers.

As mentioned above, similar recommendations were published elsewhere, that in order to get high satisfaction among patients the health care provider should go through the process of development and training of their communication skills or arrange for public information campaigns. Results of research in both areas were promising.

One limitation of our research is that we have surveyed only those patients with LBP who are coming to a FP with postgraduate qualifications and training in communication skills practicing at a teaching hospital. The results of our survey are biased on account of these reasons and cannot be generalized to the rest of General Practitioners working in this country without this training.

Another limitation of this study is that the viewpoint of a group of participants can never represent an absolute truth. It is quite possible that patients who were less satisfied and less improved as a result of treatment might also have very different perspectives regarding satisfaction and improvement. Also, this approach is limited in that patients' opinions were only captured at one interview and it is possible that we examined the potential for change in patient views and possible influencing factors.

Conclusion

A high level of satisfaction was found among patients of family physicians with regard to low back pain in this Family Practice Center. Primary care physicians' training emphasizes that building and maintaining a good doctor-patient relationship is of paramount importance, in order to get a high level of patient satisfaction. It is the Primary care physician that the patients will always return to if they are not satisfied with management of low back pain. Therefore it is in a doctor's best

status quo and not to challenge the patient's attribution of cause or affect in non-specific LBP. Future research will further clarify what outcomes our patients expect from treatment and help us to also fulfill patients' expectations and also improve their overall knowledge about LBP.

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Assessment of bed utilization at Algamhouria Modern Hospital, Aden

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Introduction

Many countries are faced with increasing deficits in the health care sector (1). Hospital services, as the most expensive component of modern health care systems, are confronted with serious issues and comprise approximately half of health care expenditure in most developed countries (2,3,4).

Thus improving the efficiency of hospital care services by cost reduction and using the capacity of existing healthcare facilities as optimally as possible, seems to be necessary especially in developing countries such as Yemen. Appropriate stay, which is considered to be typical, valuable, efficient, and customized to the patients' actual needs, would improve hospital productivity, and satisfy financial constraints without compromising the quality of care (1,2).

Evaluation of hospital data is essential for better health care service quality in hospital and it is an effective tool to determine strengths and weaknesses of hospital services (5,6,7).

Algamhouria modern hospital is a government owned public health facility situated in the city of Aden, and was upgraded recently as a modern hospital with an annual budget reaching nearly, 600 million Yemeni Riyal (3 million US dollars). The hospital serves as a referral facility primarily for Aden and the nearby governorates. It was built in the beginning of the 1950's and was officially opened in 1958. The hospital has a capacity of 500 beds, although in reality only 403 beds are functional. In this study, we used internationally accepted working definitions and calculations for calculating the indices (8,9).

Unfortunately, no study in Aden has addressed hospital bed utilization; this could be due to the hospital information system which is woefully

Abstract

Background: Algamhouria modern hospital is the main referral and teaching hospital in Aden. Therefore evaluation of hospital data is essential for better health care and service quality and it is an effective tool to determine hospital bed utilization.

The study aimed to assess the effectiveness of the use of hospital beds in internal medicine and surgical departments and to compare the bed utilization indices in our hospital and hospitals in other countries.

Methods: A descriptive retrospective data analysis of patients' admissions and discharges from surgical and medical departments for the entire year 2009 was carried out. Bed occupancy rate, average length of stay, bed turnover interval and bed turnover rate were the indices calculated. Internationally accepted working definitions and calculations were used for calculating the indices.

Results: The bed occupancy rate for the hospital was (35%). The highest bed occupancy (61%) was in internal medicine and the lowest bed occupancy was in the urology unit (11%). The average length of stay in the hospital was 10.5 days. The longest length of stay was in the orthopedic unit (18 days). Bed turnover interval for the hospital was 24 days. The highest bed turnover interval observed in the urology unit was 52 days.

Conclusions: The study provides important indices on hospital bed utilization and firmly establishes the importance of further comprehensive studies for hospital bed utilization and resources.

Key words: bed-utilization, modern hospital, Aden

inadequate in providing the needed data for a comprehensive study.

The objectives of our study were, firstly to assess the effectiveness of the use of hospital beds in the department of internal medicine and surgery and secondly to compare bed utilization indices in our hospital and hospitals in other countries.

Methods

This descriptive retrospective study was carried out during the summer of the year 2010 in Aden, based on data from the registration department of Algamhouria modern hospital which collects inpatient discharge data from all units of the hospital. It provides information on patient demography - age, sex, area of residence, number of beds, admissions, discharges, number of deaths and total length of stay in days.

The obtained data was restricted to the department of internal medicine and the department of surgery with its different units; that included, number of beds, number of admissions, discharges, number of deaths and total length of stay. The various hospital indices were calculated according to internationally accepted working definitions and calculations for indices (8,9) as follows:

a) Bed days available (BDA):

The maximum number of inpatient

days of care that would have been provided if all beds were filled during the year;

$BDA = \text{total number of beds} \times \text{the total days of the calendar year}$

b) Bed Occupancy Rate (BOR):

percentage of beds in each ward occupied by patients during a period of time (day, week, month, year);

$BOR = (\text{Inpatient Days of Care} / \text{Bed Days Available}) \times 100$

c) The average length of stay (ALOS)

of discharged patients (in days): The average number of days that inpatients remained in the hospital; $ALOS \text{ (in days)} = \text{Total inpatient days of care} / \text{total admissions}$

d) Bed Turnover Interval (BTI):

is the average period in days that an available bed remains empty between the discharge of one inpatient and the admission of the next;

$BTI =$

$\frac{\text{Available beds} \times \text{days in the period}}{\text{Number of discharges, including deaths, in the period}}$

e) Bed Turnover Rate (BTR):

The mean number of patients "passing through" each bed during the year. It indicates the use made of available beds;

Bed turnover (BTR) = Number of discharges (including deaths) in a given time period and the number of beds in the hospital during that time period.

For statistical analysis, we used the Excel program.

Results

The total number of admissions during the year 2009 was 4,019 patients. 1,149 patients were admitted to the internal medicine department; 1,006 were admitted to the general surgery department and 1,864 were admitted in the other surgical units. Overall, the discharges during the year 2009 were 3,712. The distribution of discharges, deaths and total length of stay (days) are presented in Table 1.

Table 2 (next page) reveals the different indices of hospital utilization. The overall bed occupancy rate for the hospital was 35%. The internal medicine department had the highest bed occupancy of 61% followed by pediatric surgery 47%, general surgery 40%, neurosurgery 39% and ophthalmology 36%. The lowest bed occupancy was seen in the urology unit which had a bed occupancy of only 11%.

The average length of stay in the hospital was 10.5 days. The longest length of stay was for the orthopedic unit (18 days) followed by

Department	Bed complement	Admissions	Discharge	Death	days of stay (days)
Hospital	293	4019	3712	248	41185
Internal medicine	55	1149	1059	101	12179
General surgery	80	1006	975	20	11579
Urology	20	133	125	1	798
Pediatric surgery	24	431	418	4	4112
Neuro-surgery	20	184	170	5	2839
ENT	13	128	124	1	949
Ophthalmology	9	104	97	0	1183
Orthopedic	60	343	324	3	6130
ICU	12	541	420	113	1416

Table 1: Number of admitted and discharged patients, bed complement, deaths and days of stay in hospital in surgical and medical departments

Department	Beds days available	Bed Occupancy Rate (%)	Average Length of Stay (days)	Bed Turnover Interval (days)	Bed Turnover Rate (patients)
Hospital	106945	35	10.5	24	16
Internal medicine	20075	61	11	7	21
General surgery	29200	40	12	18	13
Urology	7300	11	6	52	6
Pediatric surgery	8760	47	10	11	18
Neuro-surgery	7300	39	15	26	9
ENT	4745	20	8	30	10
Ophthalmology	3285	36	11	22	11
Orthopedic	21900	28	18	48	6
ICU	4380	32	3	6	45

ENT= Ear Nose Throat; ICU = Intensive care unit.

Table 2: Bed Utilization Rates for the Year 2009

Country	Hospital	BOR (%)	ALOS (days)	BTI (days)	BTR (patients)
Yemen	Alg. hospital	35	10.5	24	16
India ⁽²⁾	T. hospital	54.3	8.5	7	-
Saudi Arabia ⁽²⁾	T. hospital	62	6.7	-	-
Kuwait ⁽³⁾	General hospital	66.4	5.4	4	47

BOR = Bed Occupancy Rate; ALOS = Average Length of Stay; BTI = Bed Turnover Interval; BTR = Bed Turnover Rate, Alg. hospital = Algamhoria Modern Hospital, T. hospital = Teaching hospital

1: Adapted from the Reference 10

2: Adapted from the Reference 11

3: Adapted from the Reference 12.

Table 3: Bed utilization indices in our hospital and hospitals in other countries

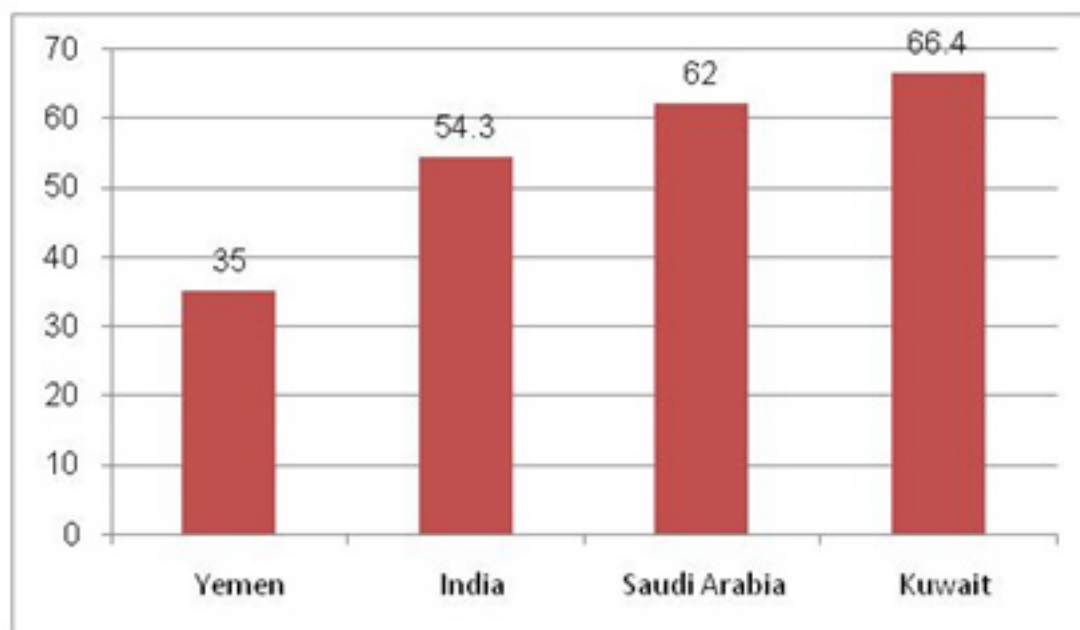


Figure 1: Bed Occupancy Rates (BOR %) in our hospital and other countries

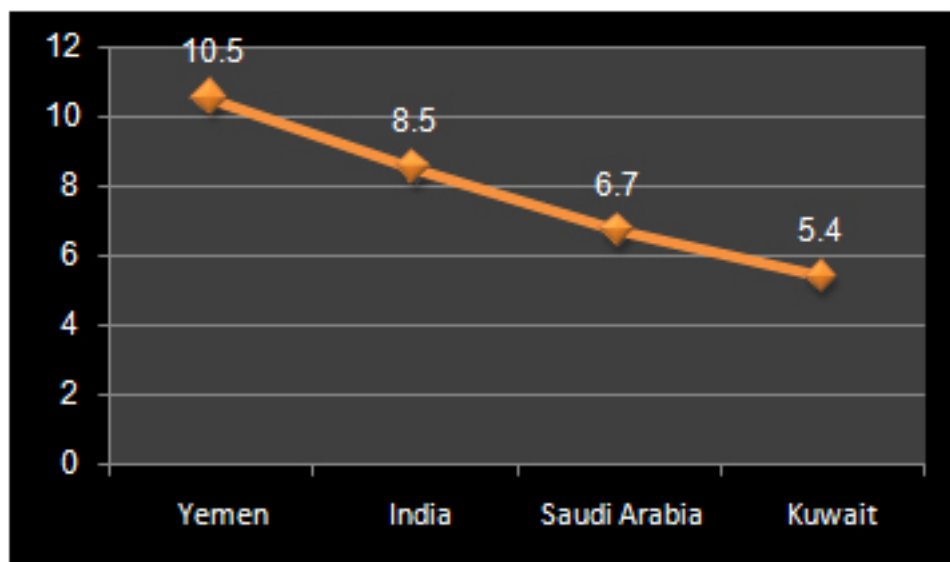


Figure 2: Average Length of Stay (days) in our hospital and other countries

neurosurgery (15 days) and the lowest was for the ICU unit (3 days). The bed turnover interval for the hospital was 24 days. The urology unit represented the highest bed turnover interval (52 days), followed by the orthopedic unit with 48 days and the lowest bed turnover interval was in the ICU unit (6 days). The bed turnover rate for the hospital was 16 patients per bed for the year 2009, and it was lowest (6 patients) in the urology unit and also the same in the orthopedic units.

Table 3 summarizes the bed utilization indices in our hospital and hospitals in other countries. These hospitals represented the situation of hospital bed utilization indices in the mentioned countries (Yemen: Algamhouria Modern Hospital in Aden; India: Teaching hospital; Saudi Arabia: Teaching hospital; Kuwait: General hospital). We compared the bed occupancy rates (BOR) in our hospital and other countries (Figure 1) and we found that BOR in Algamhouria hospital was 35%, in India 54.3%, in Saudi Arabia 62% and in Kuwait 66.4%. The average length of stay (ALOS) in Algamhouria hospital was 10.5 days, in India 8.5 days, Saudi Arabia 6.7 days and Kuwait 5.4 days as shown in Figure 2. The bed turnover interval (BTI) in Algamhouria hospital was high (24 days) compared to 7 days in India and 4 days in Kuwait. We found in our hospital the bed turnover rate (BTR) was only 16 patients passing

through each bed during the year while in Kuwait there were 47 patients (Table 3).

Discussion

Appropriate utilization of a health service may be defined as adequacy in the provision of needed services. Due to financial constraints, acute inpatient bed demand and the absolute necessity to ensure efficiency in the utilization of health care resources, the 'unoccupied bed' within the tertiary health care setting has become a significant topic of conversation and focus. However, the 'unoccupied bed' is not a phenomenon of recent interest. Over 50 years ago, matters related to bed utilization started to surface, and an occupancy rate of over 90% was thought to be achievable, with staff cooperation (13) and efficient hospital management.

In this study we found the bed occupancy rate varied between 61% in the internal medicine department and 11% in the urology unit with an average of 35%. These rates were very low compared to those reports from other countries (8,14-18).

Bed occupancy rate is an important index for measuring the extent of utilization of hospital resources. It is very clear from the observed rates in Table 2 that bed occupancy rate in all units of the surgical department of Algamhouria modern hospital

has tremendously low rates, which ultimately affect the whole bed occupancy rate in the hospital.

The average hospital bed occupancy rate (35%) in this study was lower than that reported from other countries (10,11,12).

Also, it is not consistent with the rates reported by the World Health Organization (WHO) from the Eastern Mediterranean Region, in which it mentioned that "hospital performance, generally, is characterized by low bed occupancy rates, varying from more than 80% in most member countries of the Gulf Cooperation Council (GCC) to around 45% on average in other low-to middle-income countries of the Region" (19).

The explanation of this situation is that several factors could be responsible, such as; poor management systems in the hospital, lack of coordination between the hospital and the faculty of medicine, the inappropriate working conditions in the hospital owing to low staff motivation, lack of management tools and limited transparency and accountability and low budget. In addition, since the hospital is the main teaching hospital, the overcrowding caused by medical students, public health institute students, outpatients who are seeking treatment from doctors inside the hospital, accompanied

patients and the visitors during the morning shift, may have also affected the hospital facilities and resources. The non-availability of definite written admission and discharge policies may have contributed to and affected bed occupancy. Taken together, these aspects of problems, undermine the effective delivery of specialized care in the hospital and therefore, may affect the performance and lead to this unsatisfactory situation. Weak management of hospitals has been emphasized as one of the causes of low hospital performance in the Eastern Mediterranean Region, especially in lower-middle and low income countries (19). Abdullatif reported (20) that hospital performance in how efficiently the resources are organized, managed and utilized to produce hospital services, is mostly ineffective, having low bed occupancy rates, and longer hospital stay in many EMR countries.

The other aspect of this study was to assess the average length of stay in the two departments, the internal medicine and surgical department, and the average length of stay in the hospital was 10.5 days. The longest length of stay was in the orthopedic unit (18 days) and the lowest was in the ICU unit (3 days). The longest length of stay in the orthopedic unit may be due to the fact that orthopedic cases are hospitalized for a long period since healing of fractures takes a long time. The shortest length of stay in the intensive care unit may be due to the limited beds, in ICU cases, after signs of recovery transfer to wards.

The average length of stay in hospital was longer than that reported from India (10), Saudi Arabia (11) and Kuwait (12). The average lengths of stay in the medical and surgical departments seemed to be much longer than that reported in literature (8,14-19,21).

The average length of stay in hospital in the Eastern Mediterranean Region, especially in lower-middle and low income countries, is believed to be much longer than the global average due to many factors, such

as appropriateness of interventions, knowledge and skills, and factors related to inefficiencies of the system. Length of stay is also affected substantially by the prevailing high incidence of hospital associated infections in the Region (19).

Bed turnover interval expresses the average period of days during which a hospital bed remains vacant until it is occupied by a new patient. In this study a very high turnover interval was seen in the urology unit (52 days), orthopedic (48 days), ENT (30 days), neurosurgery (26 days), ophthalmology (22 days) and general surgery unit (18 days). These high turnover intervals in urology and other units indicate that most of the beds are lying vacant for long periods of time. The turnover interval in the urology department was 52 days, which means beds remained vacant 52 days between the discharge of one patient until occupied by a new patient.

The bed turnover interval (BTI) in the hospital was high (24 days). This value was higher compared to the finding from India (10) and from Kuwait (12). The bed turnover rate (BTR) indicates the number of turnover patients in one year for the given bed complement.

During the year, only 6 patients occupied each bed of the urology, and orthopedic unit. The low BTR was also found in the other units. For the whole hospital the BTR was only 16 patients passing through each bed during the year and this number is very low to that reported from Kuwait (12). These negative results of the effectiveness of the use of hospital beds indicated that there is a defective admission mechanism, especially in the urology, orthopedic, ENT, neurosurgery, ophthalmology, and general surgery units.

Conclusion

In this study it was found the bed occupancy rate was very low and the units of the surgical department: general surgery, urology, pediatric surgery, neurosurgery, ENT, ophthalmology and orthopedic are responsible for the low occupancy

rate. The average lengths of stay in hospital seemed to be much longer than usual.

The high turnover interval was observed in the surgical departments and its different specialties. The high turnover rates indicated that there is a defective admission policy, especially in the urology, orthopedic, ENT, neurosurgery, ophthalmology, and general surgery units. The study provides important rough indices of hospital bed utilization in Algamhouria modern hospital and firmly establishes the importance of further comprehensive studies for hospital bed utilization. The health authority should take into account the results of this study to promote better utilization of hospital beds and resources.

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Case report: A Diabetic Lady with Acanthosis Nigricans, Alopecia areata, and Hirsutism

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Abstract

A young thirty-seven year old lady, who is diabetic, presents complaining of hyperpigmentation on body flexures, hirsutism on her face, and a solitary patch of alopecia on her occipital scalp. She has three children in good health and with a BMI above 30 kg/m².

Diagnosis was made clinically with some chemical investigations such as thyroid, renal and liver functions and all of which were normal apart from HbA1C which was raised which denotes poor diabetic control.

She is currently on diabetic control treatment which comprises a mix of Mixtard insulin injection and Metformin tablets. She is not on a special diet.

Such a case needs a compassionate and multidisciplinary intervention approaches with dietary and life style modifications.

Introduction

A 37 year old female with a 12 year history of poorly controlled diabetes mellitus (DM) presents with a chief complaint of hyperpigmentation, excessive hair growth on her chin and alopecia. She is currently on Mixtard insulin 50 every morning, Byetta pen 5 micrograms in the evening and Metformin 150mg twice daily. She states her menstrual periods are normal and menarche began at age 13. This information rules out polycystic ovarian syndrome (PCOS) and possible other endocrine diseases. She gives a history of anaemia, but does not know the type. There are no other complaints and no familial history.

She has a long history of confluent blackish, linear reticulated, hyperpigmented skin plaques, located on the nape of the neck, elbows, knees, axillae and pubic area (Figures 1 and 4). These were present before the diagnosis of DM.



Figure 1:
Prominent acanthosis nigricans on the neck/acanthosis nigricans of neck fold



Figure 2:
Overt patch of AA



Figure 3:
Chin hirsutism



Figure 4:
Acanthosis Nigricans AN

with typical signs of the autoimmune disease DM.

Treatment

Treatment must be directed at her three presenting problems, acanthosis nigricans, alopecia areata and hirsutism.

Discussion

Acanthosis nigricans (AN) is a mucocutaneous eruption characterised by development of a hyperpigmented thick, and velvety brownish-black darkening of the skin seen in the flexural areas (posterior neck fold, armpits, pubis, elbow and knees), lower extremities, umbilicus, groin, inframammary folds, face (perioral and peri-anal), and sometimes in maxillary and periorbital skin surfaces and (Sinha and Schwartz 2007). AN can also extend to involve mucosal surfaces of the conjunctivae, lips, oral cavity, and vulva. Sometimes those affected areas are mistaken for dirt or difficult-to-clean skin (Sinha and Schwartz 2007). The diagnosis of AN is usually clinical according to the physical features description and its symmetrical location.

AN can be benign or malignant according to the associated causation. In the latter form it precedes by years to manifest explicitly. It will present acutely with great extension, and pruritus. To complicate this more, AN has been described to be seen in most obese women (Lestringant et al. 2000). Moreover, the association between hyperandrogenism, insulin resistance and AN have been described in the literature (Lestringant et al. 2000).

AN is an important cutaneous finding as it may signify an underlying internal disease such as intra-abdominal malignancies, which is seen especially with malignant AN (Mekhail and Markman 2002). The most frequent cancer associated with malignant AN is gastric adenocarcinoma.

Patient weighs 97kg, is 168cm tall and has a BMI of 34.4. Laboratory evaluation of thyroid, renal and liver functions were within normal limits. HbA1C for the last three months was 9 which reaffirms her history of uncontrolled diabetes. Work up for anaemia was not done.

On physical examination she has a solitary patch of alopecia areata

(2x2cm) on the occipital area which has been present for 3 years. There is no involvement of eyelashes, eyebrows or other areas of the body (Figures 2 and 3)

Diagnosis

Diagnosis was based on the clinical findings of: acanthosis nigricans (AN), diabetes mellitus (DM), hirsutism, and alopecia areata (AA). She presents

Lung tumour has seldom been reported with AN, also ovarian, endometrial, breast carcinoma have been reported (Bottoni et al 2000, Pentenero et al 2004).

Furthermore, the association of AN with obesity, insulin resistance, diabetes, hyperandrogenism, polycystic ovary syndrome (PCOS), malignant tumors, and other endocrinopathies has been indicated, and has received the attention of many researchers and clinicians recently (Lestringant et al. 2000). Another study conducted in the United Arab Emirates (UAE) by Bener et al. 2001 indicated that patients who have AN have a high prevalence of DM and insulin resistance. (PCOS) represents one of these insulin resistant states. Many studies have shown that when there is insulin resistance, there is also higher hormonal levels than in non-insulin resistance. Identifying AN can be of help in detecting cases with a higher risk of DM and hormonal derangements. It is also a good cutaneous marker for tissue resistance to insulin (Lestringant et al. 2000). It is been estimated that PCOS and AN present in 5-10% of women with normal weight and in 50% of obese women. It appears that chronic hyperinsulinemia can be an important cause of hyperandrogenism which would cause other features like hirsutism as seen in this patient.

Many studies are still lacking in the area of the association of AN with hormonal levels in women, and the fact that the pathogenesis of AN in patients with altered hormonal levels is not yet clear (Bener et al. 2001).

Although there is no established association between AN and hormonal levels there is an assumption that the aetiology of AN may be attributable to increased circulating levels of growth factor stimulation. These factors include insulin-like growth factor-1 of keratinocytes and dermal fibroblasts (IGF-1) leading to AN (Eberting et al. 2005, Sinha and Schwartz 2007).

An important and useful parameter for the treatment of diabetes, as well as predictors of the progression of diabetic complications, is HbA1c (glycation end products), and obviously in our case is high and that would mean uncontrolled DM which requires a special attention in order to lessen complications in the future (Monnier et al 2005).

AN has been divided into eight categories (Sinha and Schwartz 2007). It can be benign AN, obesity-associated acanthosis nigricans which can improve with weight loss (formerly termed "pseudo-AN"), syndromic acanthosis nigricans which mostly affects young black women with PCOS features with signs of virilisation. This could fit our case as she has a slightly darker skin (type 3-4), and is hirsute as well. However she had no symptoms showing existence of PCOS, malignant AN (evolving suddenly, and associated mostly with gastric adenocarcinoma), unilateral AN, acral AN which affects the elbows, knees, and knuckles of the hands and feet, and drug-induced AN (reversible well-known phenomenon especially with nicotinic acid, and other implicated drugs such as oral contraceptives (OCP), fusidic acid, diethylstilbestrol, heroin, corticosteroids, methyltestosterone, and hydantoin-like derivatives), and lastly mixed AN, a combination of one or more of the above. In each type, other auto-immune diseases can be found as is seen in our patient who has AA, and DM.

Acanthosis nigricans in insulin dependent diabetics may also be a result of repeated injections in the same site.

In fact, DM represents a group of diseases of heterogeneous aetiology, characterized by chronic hyperglycemia and other metabolic abnormalities, which are due to deficiency of insulin effect. The treatment of AN depends largely on the underlying cause. This patient was instructed to apply a topical, mild keratolytic (e.g. salicylic acid 6% in sorbolene) on the affected areas at

night. She was also instructed on a weight loss regime explaining that weight loss would lead to clinical improvement.

As a solely a cosmetic problem, it would have a psychological effect which can lead to poor quality of life (QoL). She was also advised that laser treatment may have some promising effects (Kakleas et al. 2009).

There are no formal management guidelines currently in existence. Generally a combination of measures, including dietary modification and exercise to achieve endocrinologic hormone balance are employed.

This patient also has a solitary patch of AA on the occipital area of the scalp, the prognosis of which is difficult to predict (Tosti et al. 2006). AA is a Greek word which denotes a hair loss or baldness (Welsh and Guy 2009). AA is a frequent chronic inflammatory disorder of the hair and nails. AA is an immune-mediated disease (autoimmune disease) which first noticed by Rothman, is characterised by hair follicle destruction, and loss resulting in a smooth round area of the scalp devoid of hair. Moreover psychological stress, physical trauma, and genetic predisposition may be implicated in AA causation as well (Welsh and Guy 2009). AA can be associated with other autoimmune diseases such as myxoedema and pernicious anaemia. Our patient indicated a long term history of anaemia, but she cannot recall or specify its type. AA occurs in all ethnic groups, ages, and both sexes, and the estimated lifetime risk is 1.7% among the general population (Tosti et al. 2006).

Our case does not want to contemplate that her hair loss would be a lasting phenomenon, she has chosen a coping strategy by accepting her condition and managing it by concealment as a part of her religious scarf wearing, and thus is becoming more optimistic about living with the condition.

However AA carries social and psychological implications of physical appearance disturbance, such as negative body image and lack of confidence, as in western societies it seems that emphasis on physical appearance and attractiveness is heavily considered and mandated (Tosti et al. 2006). This seems missing and lacking in our case according to the inferences stated already.

It is however very challenging and difficult to answer patients concerns and worries and the long term recovery and prognosis as it is hard to predict in the first place. This is possibly attributable to little data, lack of controlled trials and studies about the long-term outcome of AA (Tosti et al. 2006, Garg and Messenger 2009).

Mysteriously, according to McDonagh and Messenger 2001, the occurrence of Type 1 DM is increased in family members of patients with AA but not in the patients themselves, which proposes that the predisposition to AA protects against the development of DM. In our case, DM developed since 12 years and the AA after her diabetes, which would not protect in her case, as is the idea of the current assumption.

In most published studies, patients with AA have circulating organ-specific and non-organ-specific autoantibodies compared to normal subjects, all of which indicate a case of auto immunity.

AA is a heterogeneous group of diseases and not a single entity (McDonagh and Messenger 2001). The available evidence suggests that alopecia areata is a multi-factorial incurred from combinations of genetic and, possibly, environmental factors.

Part of the remedy depends on doctor-patient relationships which cannot be straightforwardly standardized (Garg and Messenger 2009).

Moreover, searching through the Cochrane review showed the scarcity of good-quality controlled

trials in AA with absence of patient assessments of the outcomes (Garg and Messenger 2009). Furthermore, our case suffers some episodic joint pain between her legs and on her back for which she takes pain killers or just ignores it. This could be part of the diabetes or a different entity (coincidence).

The problem of hirsutism is another issue and burden for our case. Hirsutism is a Latin word which means "hairy". Hirsutism is the presence of terminal hair in patterns and sequence similar to those that develop in the normal post-pubertal male (Gilling-Smith C. 2008). In our patient's case it affects her chin area mainly, and not other parts of the body such as chest, or umbilical line. It is a very distressing cosmetic problem with significant psychological impacts. She tried many modalities and is thinking of laser treatment lately. In most cases the main culprit is a state of hyperandrogenism, and polycystic ovarian syndrome which is obviously not the case in our patient, as her blood hormones were within normal as she indicated, plus she had no history of fertility impairment and this would imply a diagnosis of idiopathic hirsutism (IH). Moreover a history of regular periods may not precisely reveal ovulatory status in hirsute patients (Gilling-Smith C. 2008).

According to Glintborg et al. 2004, frequently the hirsute patients have a high risk of diabetes, although this could be attributed to the high number of overweight patients.

The need for rapid methods of hair removal has led to the development of laser epilation for hirsutism. This is a rapidly expanding and effective tool with a safe and fast means of long-term use (Azziz et al, 2002). But, still, many questions need to be answered, and more studies need to be conducted to provide more precise answers to hair reduction in hirsutism.

It is important to complete an endocrinological examination and investigate for a hyperandrogenic state, and to evaluate the ovaries

by ultrasound in all patients with hirsutism, to exclude PCOS. There are no two patients alike and the treatment results vary from one patient to another, depending on the amount of hair growth and personal preference. In our case, hormones assessment was all normal as she indicated clearly. Thus in her case, laser therapy can be an effective tool.

To sum up; a multidisciplinary intervention group is crucial as well as metabolic control, patient's family and emotional support, and stressing dietary and lifestyle modifications, exercise and perhaps pharmacologic therapy.

Recommendations

A compassionate approach is vital for management of such cases.

Insulin lowering drugs (i.e metformin) are helpful and valuable in such a case to combat insulin resistance. Obesity drastically worsens the severity of hirsutism.

Women with a body mass index (BMI) above 30 kg/m² should get onto a weight-beating programme as an appendage to other therapies. Consultation concerning adopting a new healthier lifestyle is mandatory, with daily workout. Long deep penetrating, wavelength Lasers are needed to damage the hair follicle bulb.

Laser hair removal has proved to be safe as well as an effective tool of hair removal but a long course is required and the best results are seen in fair-skinned patients with darker hair, because hirsutism tends to revert back after treatment cessation.

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Childhood diffuse large B cell lymphoma of bone

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Introduction

Childhood Non-Hodgkin's lymphoma (NHL) consists of four main subtypes including Burkitt lymphoma, lymphoblastic NHL, anaplastic large cell lymphoma (ALCL) and diffuse large B cell lymphoma (DLBCL). DLBCL accounts for more than 90% of cases of lymphoma in childhood (1).

Primary lymphoma of bone (PLB) is one of the rarest primary bone malignancies, accounting for less than 5% of all primary bone tumors (1). The vast majority of bone lymphomas are of the Non-Hodgkin's type, with Hodgkin's disease accounting for the rest according to the World Health Organization (WHO) classification (2).

It is a rare presentation of non-Hodgkin's lymphoma in children and most reports have described the disease in the fourth and fifth decade of life.

The optimal management of primary bone lymphoma remains unclear, especially regarding the role of chemotherapy and radiotherapy and whether combination therapy is superior to either.

We are reporting a fourteen year old child who presented with a rare clinical subtype of lymphoma that is primary bone lymphoma with DLBCL pathological subtype.

Case Description

We are describing a fourteen year old girl from Egypt who was admitted to the Medical Department at Mubarak al Kabeer Hospital with five months history of fever, bony pain and significant weight loss. Physical examination was normal apart from fever and low back tenderness. Her CBC was normal, and septic screen including blood culture and urine cultures were normal. Liver and renal functions were within normal and LDH was elevated. Virology screen including hepatitis B, C and HIV were all negative.

Abstract

Primary bone non Hodgkin's lymphoma (PLB) is a rare extranodal lymphoma worldwide accounting for less than five percent of all primary bone tumors and less than two percent of all cases of lymphoma.

PLB is rare in children and there is a very limited number of reports concerning the best treatment option for this subtype of lymphoma in children as well as adults.

We are reporting a fourteen year old girl who presented with stage IV E PLB of diffuse large B cell pathological subtype with literature review of the epidemiology, clinical presentation, radiological and

pathological diagnosis, staging, treatment options and finally prognosis of PLB.

Keywords: DLBCL; PBL; childhood lymphoma

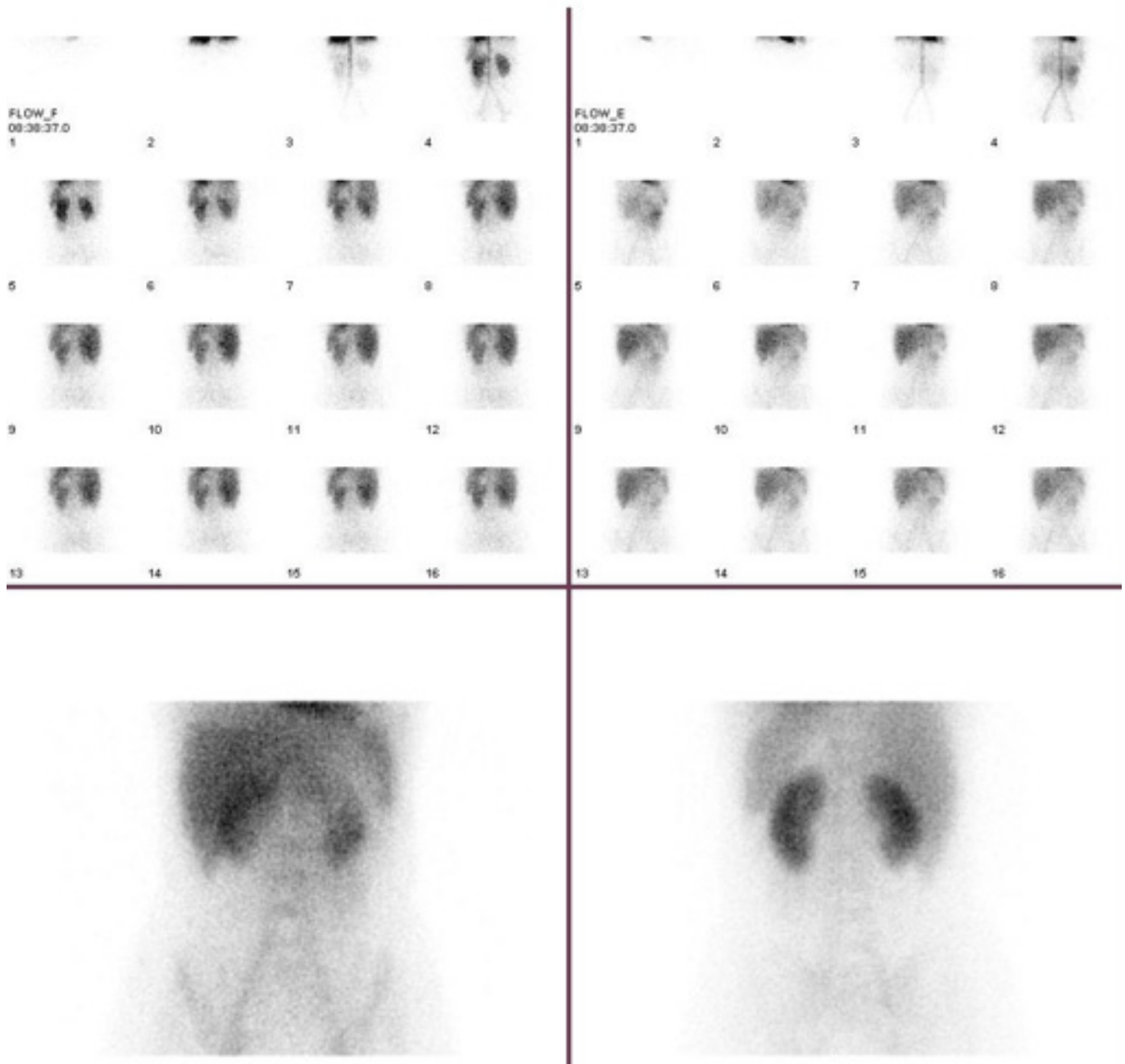


Figure 1A

Serum protein electrophoresis was normal. Bone scan showed a focal area of increased uptake in the upper cervical vertebrae, and non uniform tracer uptake in the rib cage and sternum with multiple areas of increased and decreased tracer uptake. Non uniformity with foci of increased activity were noted in the spine, proximal femur, and left hip joint. These findings were consistent with an infiltrative process such as lymphoma or leukemia. (Figures 1A-D pages 52-55)

The patient had a bone biopsy from the lytic lesion which showed infiltration by neoplastic cells. These

cells were large immunoblastic- like cells with round nuclei containing large central nucleoli and abundant cytoplasm.

Immunohistochemistry using a panel of markers showed positive staining for pan B cell markers (CD19, CD20, CD22, and CD79a), CD 45 and monoclonal surface membrane IgM. Tumor cells were negative for T-cell markers including CD3, CD5, CD4, and CD8. The cells were expressing BCL -2 and BCL-6.

Further staging work up was done including CT scan of neck, chest, abdomen and pelvis that showed

multiple subs -centimeter mesenteric and Para-aortic nodes, which are of no clinical significance, and lytic bony lesions involving L1, L2 and L4 vertebrae. (Figure 3-4 commencing page 56)

Gallium scan was done and it did not show any uptake in the lymph nodes nor the bony lesion.

Bone marrow biopsy was positive for presence of lymphoma cell as proven by histological appearance and the flow cytometry which was identical with the immunohistochemistry of the bone biopsy.

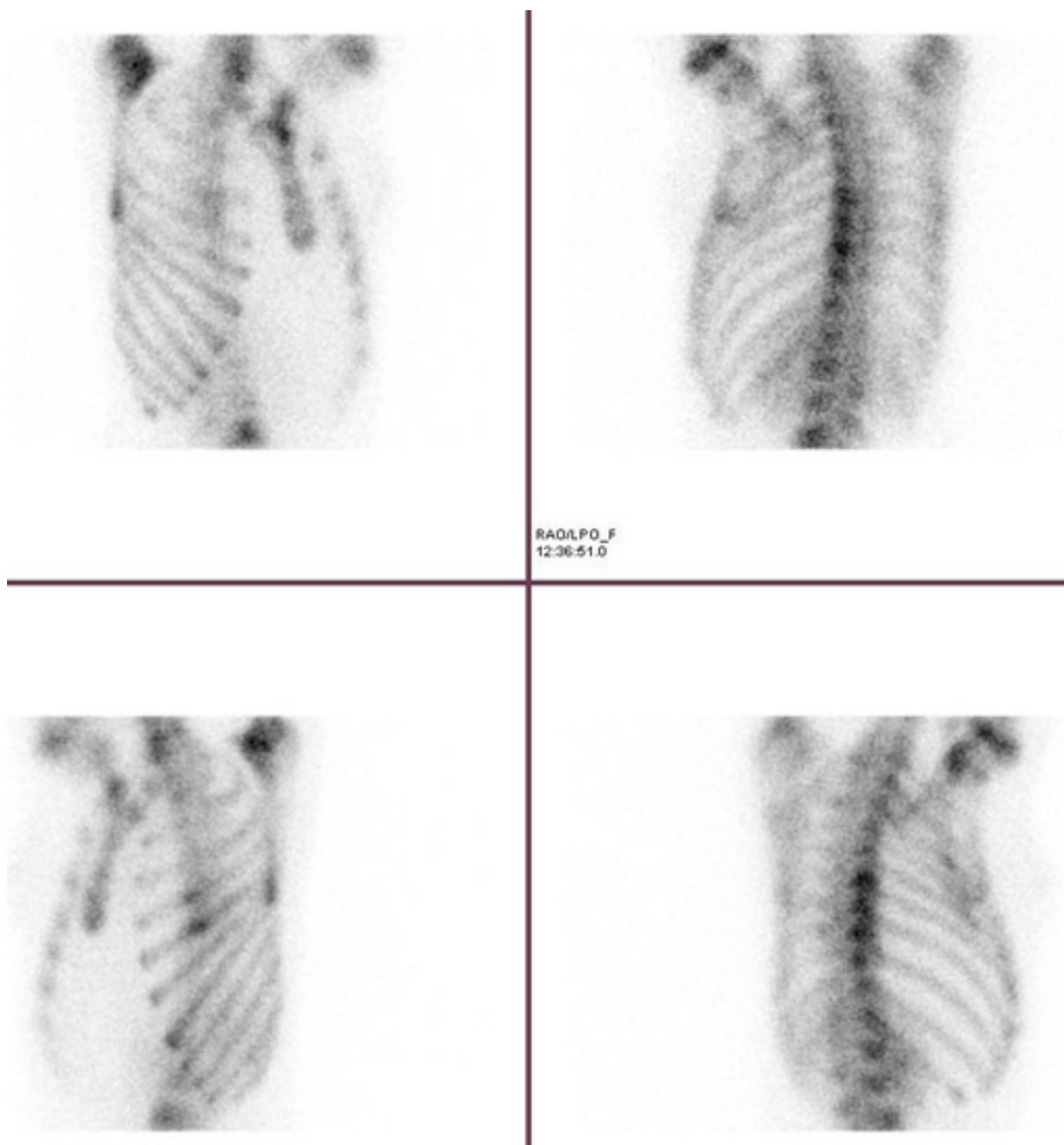


Figure 1B

This confirmed the diagnosis of stage IVEB primary lymphoma of bone with DLBCL pathological subtype.

The patient had been recently referred to the pediatric hematology /oncology centre to decide on the best treatment option.

Discussion

WHO recognizes the following 4 groups of lymphoma involving bone: Group 1, single primary bone site

with or without single lymph nodes; Group 2, multiple bone sites but no visceral involvement; Group 3, bone lesion and involvement of multiple visceral or lymph node sites and Group 4, soft tissue lymphoma, with bone involvement detected by bone biopsy or marrow aspirate (2)

PLB is defined as bone lymphoma without evidence of distance lymph nodes or other tissue involvement at presentation (2).

The male to female ratio of PLB is 1.8(3). The mean age of presentation is 42 years ranging from 2 to 88 years (3). In children it can affect all ages but most commonly early adolescence (3).

PBL constitutes <5% of extra-nodal lymphomas (4) , and <2% of all lymphomas in adults (4). In children and adolescents, there have been a few studies with only small numbers of patients with PBL. It presents in

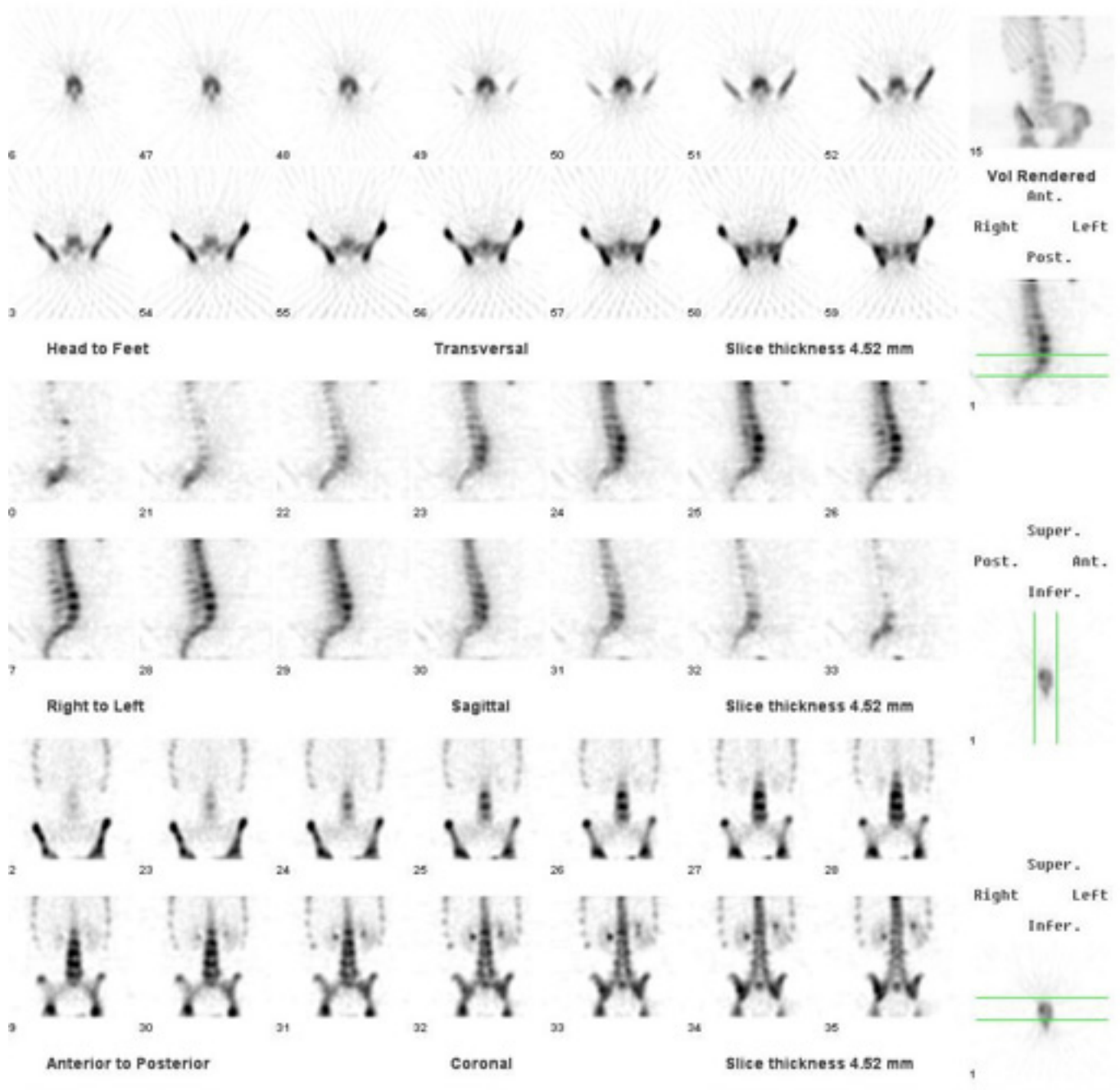


Figure 1C

3-9% of all cases of non-Hodgkin lymphoma in children. (3)

The patients present usually with bone pain without antecedent trauma. Other symptoms include palpable mass due to soft tissue extension, pathologic fracture of the involved bone and systemic “B” symptoms. The disease mainly affects the long bones (4,), however, some studies showed equal numbers of cases presenting in long bones and the spine (4).

The most common radiographic appearance of PBL is the osteolytic

destructive pattern which was reported in approximately 70% of 237 cases according to Mulligan and colleges (3). Cortical breakthrough, pathological fracture and soft tissue masses represent a more aggressive pattern of involvement and poor prognosis(3).

The staging is performed the same way as in NHL (according to the Ann Arbor classification) utilizing CT scan of the chest, abdomen and pelvis in addition to bone scan and MRI. Stage I was defined as a single bony lesion with surrounding soft tissue involvement; stage II was

defined as a single bony lesion with the draining lymph nodes; stage III disease included the presence of a single bony lesion and associated lymph nodes on both sides of the diaphragm; and stage IV disease was the presence of multiple bony lesions, with or without lymph node involvement, and extension to other organs such as bone marrow, major organs and positive cerebrospinal fluid. Stage IV also included a disease that involves the entire long bone. (5)

In the majority of cases pathological examination demonstrates the

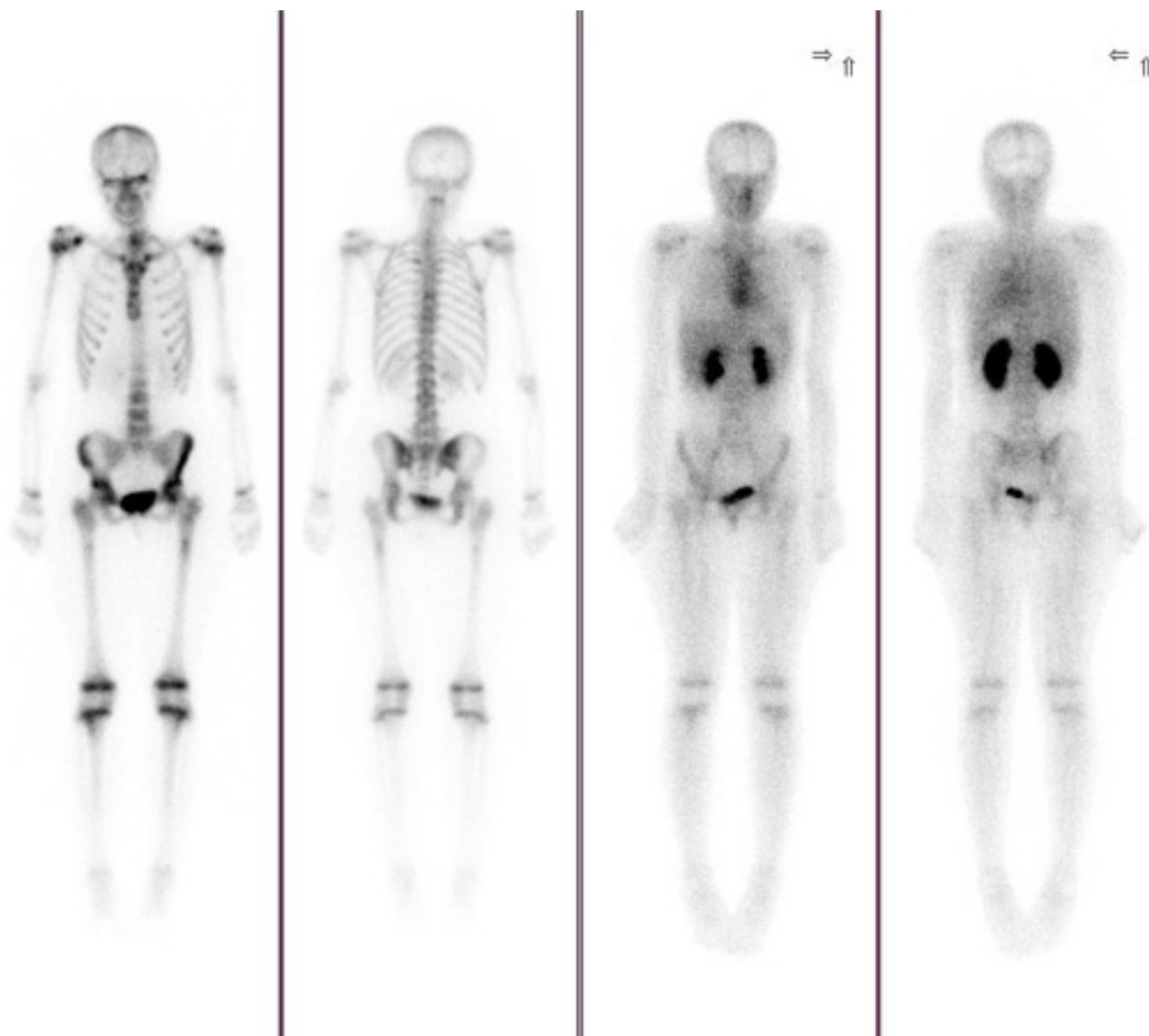


Figure 1D

presence of DLBCL, rarely indolent lymphoma, highly aggressive subtype lymphomas or CD30-positive anaplastic large-cell lymphomas (predominantly of T-cell subtype). (6)

The optimal approach to treatment of PLB is not established. Treatment of PLB in adults involves multi-agent chemotherapy such as cyclophosphamide, vincristine, doxorubicin and prednisolone (CHOP) or CHOP plus rituximab (R-CHOP), with or without radiotherapy (7).

Treatment of localized PLB in most children and adolescents with a 9-week chemotherapy regimen is sufficient, and radiotherapy seems to be unnecessary. Treatment of more advanced stages of the disease in

children is by using standard multi-agent chemotherapy. The use of radiation is preserved for cases with progression of the disease or incomplete response to the therapy. (8)

The overall response rate ranges from 40% to 90% in children according to different series (9) In general, survival is excellent when the disease is limited; whereas more advanced cases have a less favorable outcome (10).

Poor prognostic factors include young age at presentation, advanced-stage, multi-focal disease, and non-large-cell histology.(10)

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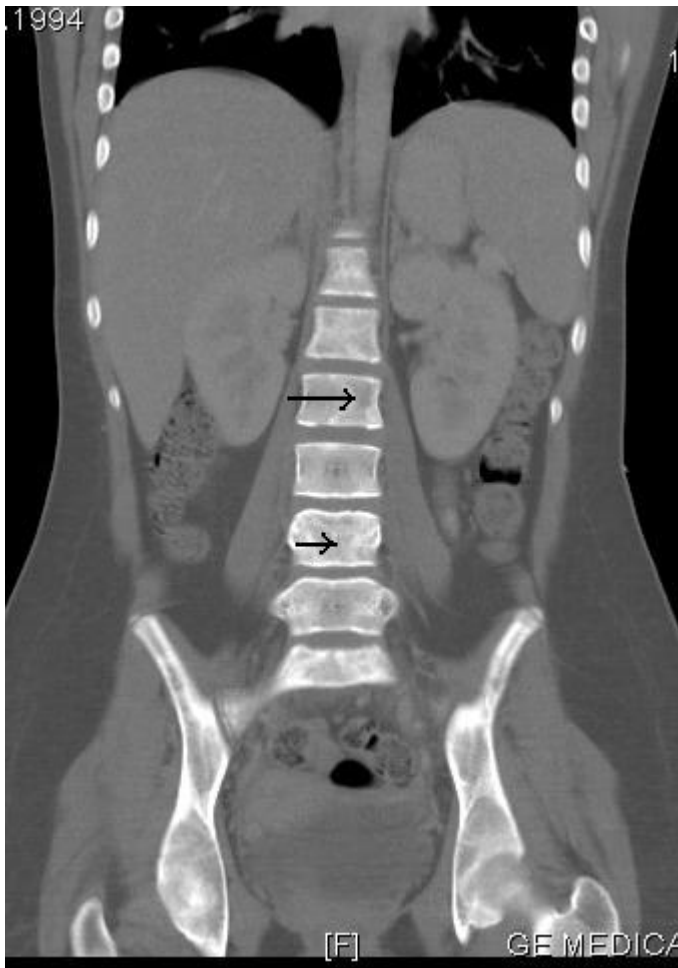


Figure 2

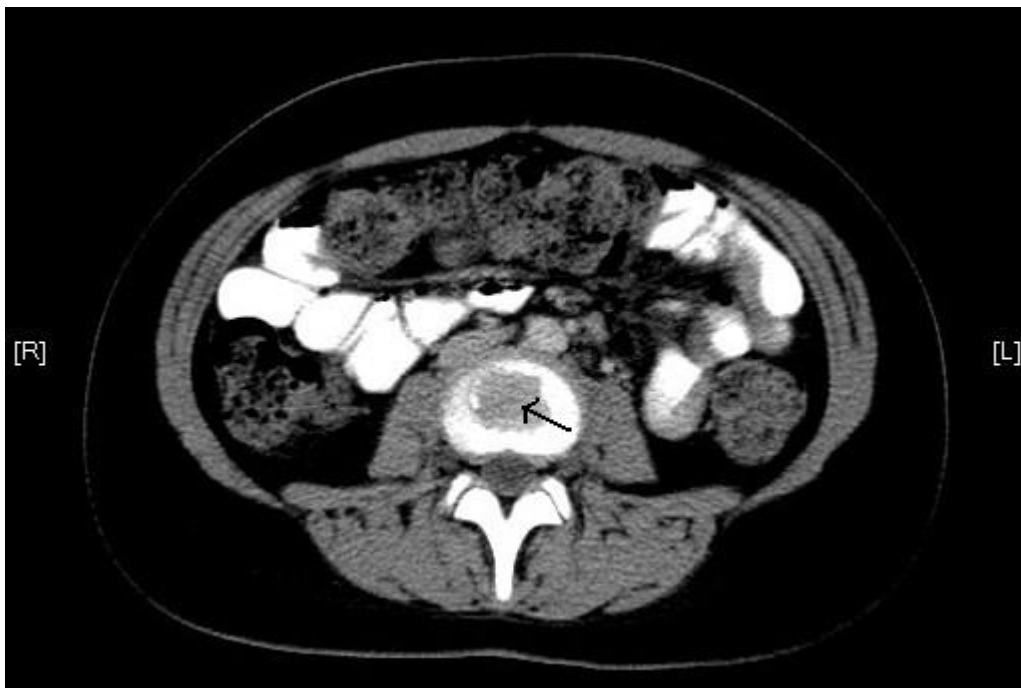


Figure 4



Figure 3A

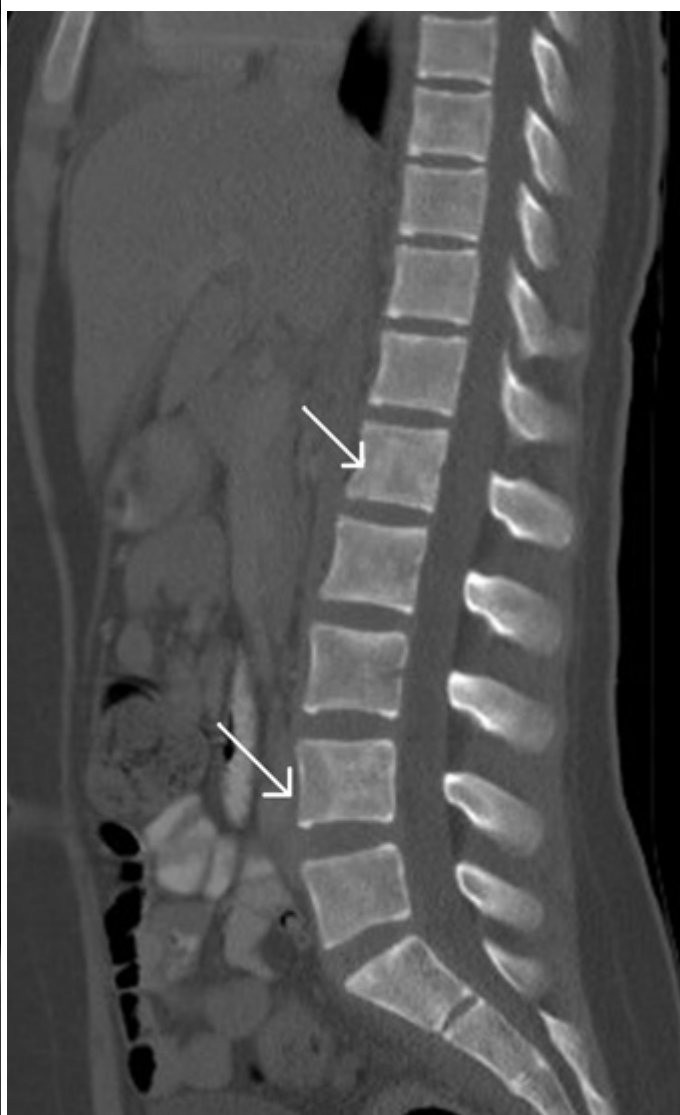


Figure 3B

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