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A CROSS-SECTIONAL RESEARCH TO DETERMINE THE PROFILE OF LIPID AMONG PCOS (POLYCYSTIC OVARY SYNDROME) PATIENTS

[1]Dr. Aqib Dastgeer, [2]Dr. Tehreem Tariq, [3]Dr Rumesa Nasir
[1]MO, Incharge BHU Bahiwal, Lalian, Chiniot
[2]Aziz Bhatti Shaheed Teaching Hospital
[3]Rawalpindi Medical College

Abstract
Objective: *The objective of the research was to determine the lipid profile in patients of PCOS.*
Materials & Methods: *The total number of PCOS patients enrolled in our cross-sectional research are 286 from Gynecology and Obstetrics Department of Sir Ganga Ram Hospital, Lahore in the timeframe of February to August 2017. The researcher examined the Lipid profile of entire enrolled patients*
Results: *In our cross-sectional research, the average age of the patients was 24.40 ± 5.367 along with 21.01 ± 1.912 body mass index. The researcher recorded dyslipidemia in sixty-nine (24.13) patients and diagnosed four (1.9%) patients of dyslipidemia in the age category of eighteen to twenty-seven years along with sixty-five (85.53%) patients of age category twenty-eight to thirty-five years*
Conclusion: *Researcher identified the increased percentage of dyslipidemia in PCOS patients as well as commonness of dyslipidemia also at peaked with age advancement. Moreover, dyslipidemia was too expressively related to body mass index.*
Keywords: *PCOS (Polycystic Ovary Syndrome), Polycystic Ovary (PCO), ALP (Atherogenic Lipid Profile), Very Low-Density Lipoprotein (VLDL), High-Density Lipoprotein (HDL)*

Corresponding author:
Dr. Aqib Dastgeer,
MO, Incharge BHU Bahiwal, Lalian, Chiniot

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INTRODUCTION:

PCOS is multifactorial as well as the status of polygenic [1]. It is an indication of ovarian disorder which is represented by anovulation, the existence of PCO morphology. The PCOS is usual most female endocrinopathies influencing six to ten percent of a female in the age of reproduction [2]. Polycystic ovary syndrome is related to prolonging duration hazard of health comprising diabetes type II as well as coronary artery complication [3]. Insulin opposition, hyperandrogenism as well as dyslipidemia are similarly to be the main hazardous cause for CVD in females with polycystic ovary syndrome. Insulin opposition along with dyslipidemia appear to have an expressive function on the hazards of cardiovascular pathology in females with polycystic ovary syndrome [4, 5]. Dyslipidemia hazardous level is consistently ambiguous. Mostly, dyslipidemia of polycystic ovary syndrome is represented by higher triglycerides along with lesser High-density lipoprotein cholesterol, however, some research diagnosed although lesser High-density lipoprotein cholesterol is frequent, and hypertriglyceridemia to be comparatively infrequent [6]. To the adverse, the greatest definitive lipid variation identifying CV hazard, maximization of low-density lipoprotein-cholesterol, is infrequent in entire population with polycystic ovary syndrome [5]. After entire low-density lipoprotein - cholesterol engrossment, the low-density lipoprotein status might put a blunt effect on the CV hazard. Many causes have been proposed for the atherogenicity of lesser thick low-density lipoprotein [7]. In association to higher, most buoyant low-density lipoprotein, minor buoyant low-density lipoprotein is obtained quite comfortably through arterial tissues, have reduced ingredients of sialic acid as well as receptor mediated uptake, along with higher oxidative vulnerability and attenuated antioxidant engrossment. The superiority of tiny, thick low-density lipoprotein, and accepted as compelling cardiovascular hazard factory. Specifically, the relation of expanded tiny low-density lipoprotein along with hypertriglyceridemia and lesser High-density lipoprotein cholesterol, so-called atherogenic lipid profile, appear to decide a specifically higher CV hazard [7]. The patients of hyperinsulinemia and hyperandrogenemia reason adipocytes to endure expended catecholamine-produced lipolysis and discharge of open fatty acids into the vogue. Maximum open fatty acid in the liver arouse occultation of very low-density lipoprotein that definitely advances to hypertriglyceridemia. A basic factor encircling polycystic ovary syndrome is insulin opposition. The opposition of insulin advance to hepatic over stagnation of apoB and very low-density lipoprotein and conclusively advance to hypertriglyceridemia. In the furthest some years many research has proposed that, along with plasma lipids, different variation apoB and Lp expressively extended the cardiovascular hazard [8].

MATERIALS & METHODS:

The total number of PCOS patients enrolled in our cross-sectional research are 286 from Gynecology and Obstetrics Department of Sir Ganga Ram Hospital, Lahore in the timeframe of February to August 2017. Researcher enrolled entire polycystic ovary syndrome patients having age between eighteen to thirty-five years with body mass index of less than twenty-five in research and expelled all dyslipidemia patients, ischemic heart complication as well as all diabetes mellitus and lipid-lowering drug obtaining patients. The researcher takes the blood specimen along with fasting blood specimen and send these specimens to a laboratory to examine entire cholesterol along with low-density lipoprotein, High-density lipoprotein as well as triglycerides. Researcher also take entire cholesterol greater than (22mg/dl), low-density lipoprotein -C greater than (130 mg/dl), TG greater than (150mg/dl) as well as High density lipoprotein cholesterol less than (40mg/dl) as common and non-common values for every individual of above values were assumed as dyslipidemia, entered entire information into SPSS software and calculate average and periodicity for numerical as well as categorical information respectively and applied chi-square test to find out level of expression.

RESULTS:

The total number of PCOS patients enrolled in our cross-sectional research are two hundred and eighty-six. The average age of the patients was 24.40 ± 5.367 along with 21.01 ± 1.912 body mass index. Researcher recorded dyslipidemia in sixty-nine (24.13) patients out of two hundred and eighty-six and diagnosed four (1.9%) patients of dyslipidemia in age category of eighteen to twenty-seven years out of total two hundred and ten (73.43%) patients along with sixty-five (85.53%) patients among seventy-six (26.57%) patients of age category twenty-eight to thirty-five years.

Patients were distributed into two body mass index categories, eighteen to twenty as well as twenty-one to twenty-three. In eighteen to twenty body mass index category, there were one hundred and forty (forty-nine percent) patients and in body mass index category of twenty-one to twenty-three there were one hundred and forty-six (fifty-one percent) patients,

in body mass index category of eighteen to twenty, dyslipidemia was identified in two (1.43%) patients and in twenty-one to twenty-three body mass index category dyslipidemia was identified in sixty-seven (forty-six percent) patients.

Table – I: Dyslipidemia Stratification

Status	Yes	No
Dyslipidemia	24.13	75.83

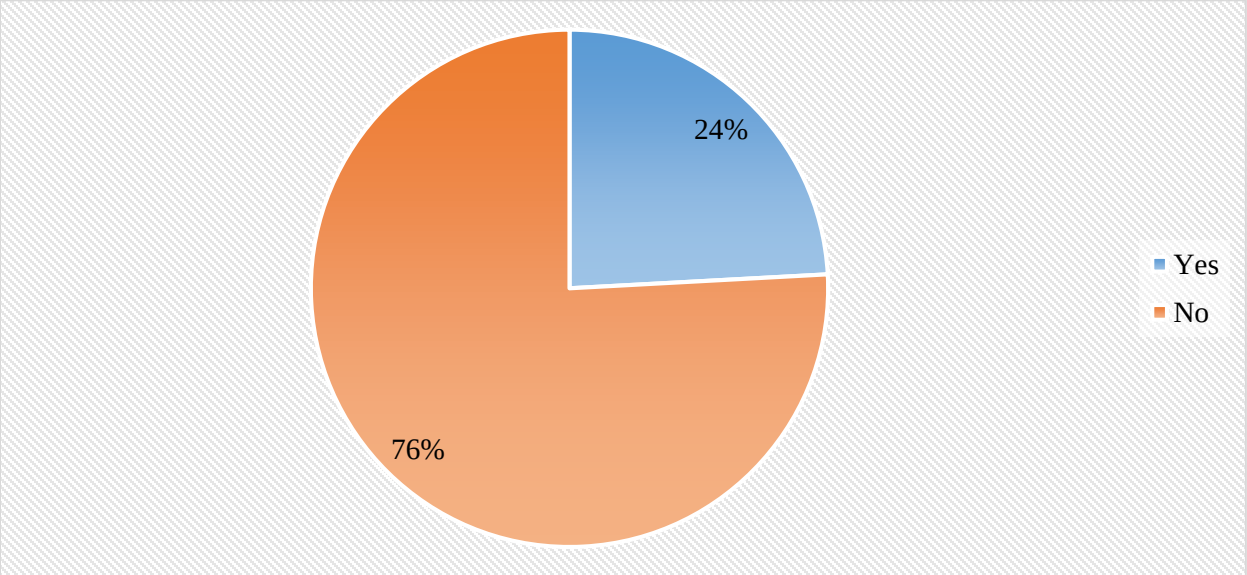
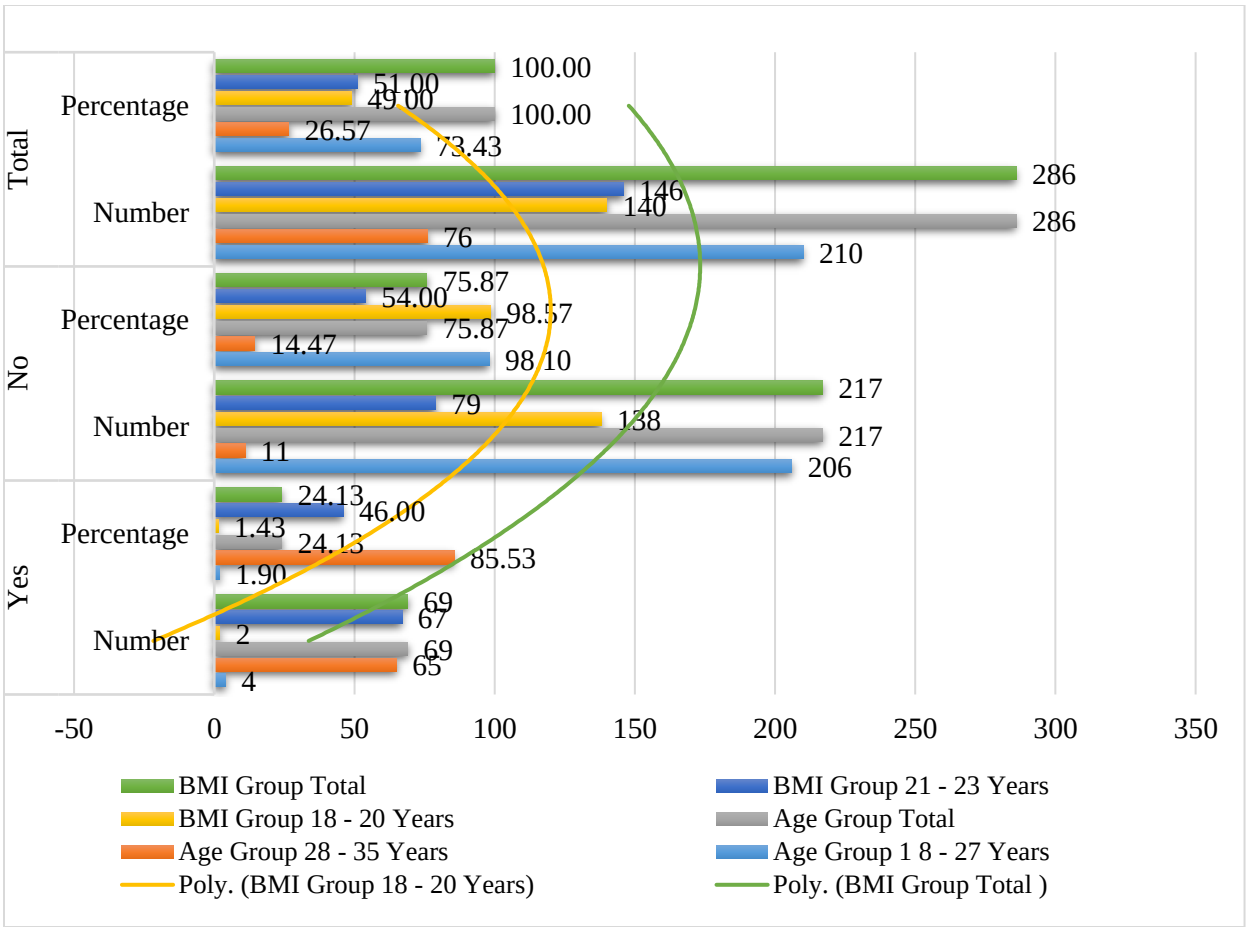
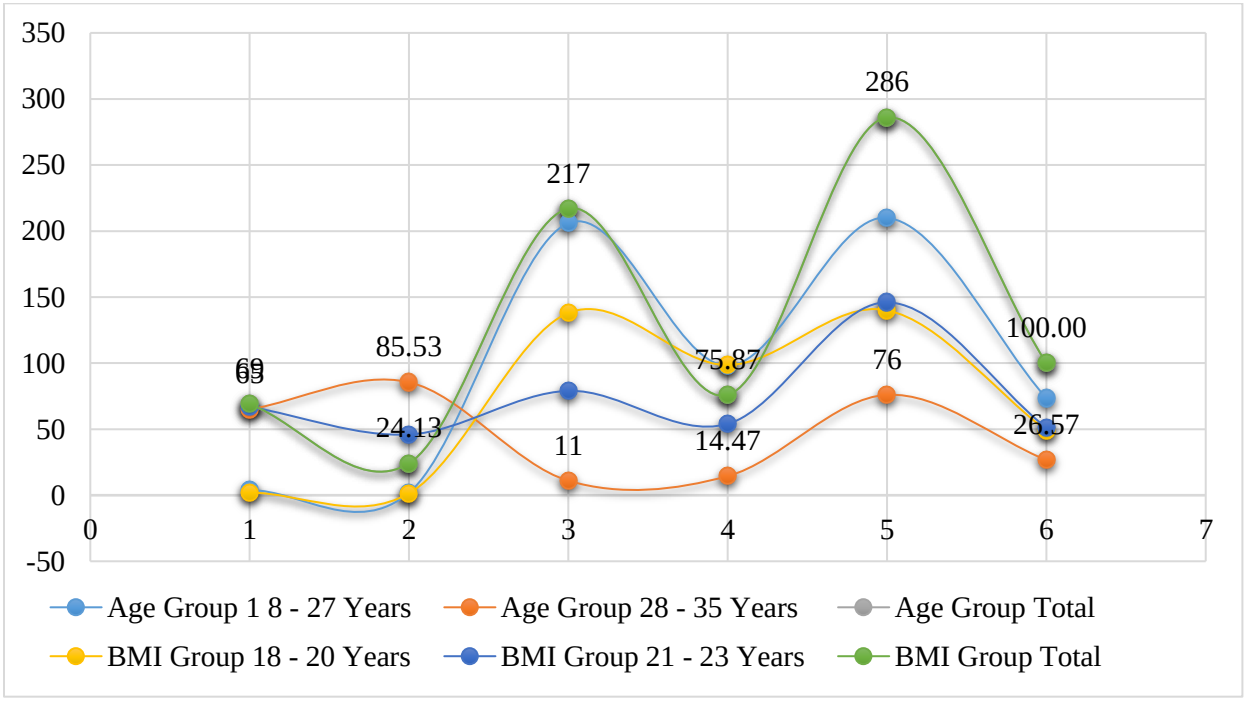


Table – II: Group Wise Age and BMI Outcomes

Groups		Yes		No		Total		P-Value
		Number	Percentage	Number	Percentage	Number	Percentage	
Age Group	1 8 – 27 Years	4	1.90	206	98.10	210	73.43	0.000
	28 – 35 Years	65	85.53	11	14.47	76	26.57	
	Total	69	24.13	217	75.87	286	100.00	
BMI Group	18 – 20 Years	2	1.43	138	98.57	140	49.00	0.000
	21 – 23 Years	67	46.00	79	54.00	146	51.00	
	Total	69	24.13	217	75.87	286	100.00	


Total
Percentage
Number
No
Percentage
Number
Yes
Percentage
Number
100.00
51.00
49.00
100.00
26.57
73.43
286
146
140
286
76
210
75.87
54.00
98.57
75.87
14.47
98.10
217
79
138
217
11
206
24.13
46.00
1.43
24.13
85.53
1.90
69
67
2
69
65
4
-50
0
50
100
150
200
250
300
350
BMI Group Total
BMI Group 21 - 23 Years
BMI Group 18 - 20 Years
Age Group Total
Age Group 28 - 35 Years
Age Group 1 8 - 27 Years
Poly. (BMI Group 18 - 20 Years)
Poly. (BMI Group Total)


350
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286
217
85.53
100.00
75.87
76
24.13
11
14.47
26.57
Age Group 1 8 - 27 Years
Age Group 28 - 35 Years
Age Group Total
BMI Group 18 - 20 Years
BMI Group 21 - 23 Years
BMI Group Total

DISCUSSION:

PCOS is the general most endocrine complication to influence females. It is an inborn complicated disorder which is categorized by hyperandrogenemia as well as amenorrhea or oligomenorrhoea out coming in infertility in females having an age of reproductively [9]. The foremost character of polycystic ovary syndrome comprised persistent anovulation, biochemical hyperandrogenism, and fitness as well as polycystic ovaries. Amenorrhea, connected with hyperandrogenism along with clinical appearances of excessive hairiness or acne existence.

Whereas various introductory pathophysiological methodologies have been suggested for the advancement of polycystic ovary syndrome, the opposition of insulin is now approved to be connected with the syndrome. IR in females put females at a great hazard for advancing diabetes mellitus of type II and cardiovascular complication [10]. The factor of polycystic ovary syndrome consistently ambiguous as well as ovarian steroidogenesis, hyperinsulinemia and neuroendocrine complication has been suggested as major fundamental complication [11]. Polycystic ovary syndrome also has potent genetic element moreover additional researches in this specific ground has to be conducted for diagnosing of hereditary considerations of polycystic ovary syndrome because of the conjunction of various serious causes. Fatness, hyperinsulinemia as well as insulin opposition are generally related with approved greater hazard for the advancement of metabolic indication along with diabetes mellitus. The metabolic indications are a collection of hazardous agents for the advancement of CVD. Metabolic indications are categorized by central fatness, higher levels of low-density lipoprotein, Triglyceride, and very low-density lipoprotein cholesterol as well as insulin opposition [12]. According to the research conducted by Moini et al presented the periodicity of MBS in female age of reproduction with polycystic ovary syndrome to be (22.7%) that was uniform to the dominance of MBS in additional ethnicities as well as races identified with polycystic ovary syndrome [13]. Thus females with polycystic ovary syndrome have huge dominance of MBS as well as its every element specifically diminishing HDL levels. Therefore, the treatment of these females as huge hazard population for MBS is approved. In our cross-sectional research, the average age of the patients was 24.40 ± 5.367 along with 21.01 ± 1.912 body mass index. The researcher recorded dyslipidemia in sixty-nine (24.13) patients.

Kim JJ et al presented average age 24.9 ± 6.0 years along with 22.4 ± 4.1body mass index in his research and dyslipidemia dominance was (35.7%) in eight hundred and sixty-five subsequent patients [14]. These outcomes are in favour of our researches. In one of the research conducted by Chae et al presented the biochemical as well as clinical features of polycystic ovary syndrome in females of Korea [15]. In one hundred and sixty-six females with polycystic ovary syndrome and two hundred and seventy-seven controls, dominance of higher triglyceride (greater than or equal to 150 mg/dl) was (26.7%), however that of controls was one percent ($P < 0.001$), dominance if low High-density lipoprotein cholesterol (less than 50mg/dl) was thirty percent, whereas that of control was three percent ($P = 0.004$) in one research conducted by Hong Y et al presented the dominance of dyslipidemia was 24.7% in patients of polycystic ovary syndrome and the commonness of dyslipidemia was expressively huge in the IR category as compared to NIR category (39.9% against 15.3 %, $P < 0.05$) [16]. In one additional research conducted by Rocha et al presented the occurrences of dyslipidemia in the category of polycystic ovary syndrome was double to that of controls category (76.1% vs. 32.25%) [17]. the most common complication was low high-density cholesterol (High-density lipoprotein cholesterol was 57.6%) and high triglycerides (Triglyceride) (28.3%). High-density lipoprotein cholesterol was expressively lesser in entire categories of females with polycystic ovary syndrome when correlated with subcategories of normal females.

CONCLUSION:

The researcher identified the increased percentage of dyslipidemia in PCOS patients as well as commonness of dyslipidemia also at peaked with age advancement. Moreover, dyslipidemia was too expressively related to body mass index.

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