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Original Research Article

Anti-Obesity Drug Prescribing Pattern to the Young People in Primary Care: An Indian Scenario

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Abstract

Obesity is the precursor of many diseases which affects the human health. This condition of overweight and obesity affects the poor section of society as well as the rich to same extent. There is no age barr for occurrence of obesity and its related co-morbidities. Among the world all the countries are facing this problem. In India this ailment is observed but no proper treatment or management is done among the obese population. The present research work tries to focus on the using pattern of anti-obesity drugs in young population. The clinical study was carried out on 450 respondents undergoing the obesity treatment. The outcome of the present research indicates the off-labeled use of obesity medication. Moreover, less clinical response and long term therapy resulted in premature discontinuation in large number of respodents.

Keywords: Anti-Obesity, India Population, Co-Morbidities, Off Line Treatment.

1. INTRODUCTION

Obesity is one among the most drastic condition that has arisen in the last few decades. High-calorie diet collectively with a sedentary lifestyle has been recognized as a potential risk factor for diabetes mellitus, cardiovascular disease and cancer. The factors such as aging patterns, socioeconomic factors and lack of physical activity influence the rate of obesity in any particular region. This in turn requires awareness among the public and medical community to develop and put into practice effective treatments for obesity. India is the country of wide variations and anecdotal geographical, social and cultural norms. The prevalence of obesity in India goes side bi side along with malnutrition (double burden). The researchers have tried to reveal the literal cause of obesity in India but, were unable to do so in light of unbuildable data. The reports suggested that in India Punjab state has the maximum obese population 30.3% (male) and 37.5% female in contrast to other states.

Hon Liou et al. carried a cross-sectional study to determine the prevalence and patterns of anti-obesity medicine use among subjects seeking obesity treatment in Taiwan [1]. The study concluded, the prevalence of anti-obesity drugs use is high among Taiwanese adults before they seek obesity treatment. Young, obese females, and those who had taken Chinese herbal preparations/dietary supplements had a high likelihood to report using anti-obesity medicines. Viner et al. studied population-based prescribing data from the UK General Practice taking total of 452 subjects received 1334 prescriptions during the study period [2]. The annual prevalence of anti-obesity drug prescriptions rose significantly from 0.006 per 1000 in 1999 to 0.091 per 1000 in 2006, a 15-fold increase, with similar increases seen in both genders. Carvalho e Martins et al. carried a cross sectional random study of 664 college students [3]. The study was based on the variables like drug use, socio-economic, and anthropometric. The result of the studies suggested that only 31.1% of medications were prescribed by doctors. Moreover, only 6.8% of the students reported the use of anti-obesity drugs. This concluded that use of anti-obesity drugs among college students is of concern, particularly due to the high proportion of drug use without indication or prescription. Hampp et al. examine national trends in prescription anti-obesity drug use in the United States [4]. According to his study, in 2011, approximately 2.74 million patients used anti-obesity drugs, predominantly phentermine (2.43 million

patients). The use of prescription Orlistat and Sibutramine was relatively uncommon. Duration of use was generally short and most patients only had one episode of anti-obesity drug use during the observation period. The longest period of use was 30 days or less in 47-58% of patients. Approximately, one quarter of the patients used anti-obesity drugs for longer than 90 days, including phentermine and other amphetamine congeners whose labels recommend short-term use. Only 1.3-4.2% of anti-obesity drug users used them for longer than 1 year. Truter studied the prescription pattern of anti-obesity drugs in South Africa [5]. A total of 27,703 patients were prescribed 52,555 products for anti-obesity medication during 2013. 72.19% females were dispensed anti-obesity products, and females received their prescriptions at a younger average age than male patients. Five active ingredients were dispensed namely Phentermine (92.44%) was prescribed the most followed by orlistat (6.08%), phendimetrazine (1.36%), D-norpseudoephedrine (0.06%) and diethylpropion (0.05%). Most patients (79.44%) received one or two prescriptions for an anti-obesity product during the year. A small percentage (0.30%) of young patients (18 years and younger) received anti-obesity products, despite the fact that the safety of these products in children has not been proven. The aim of the present research work is to study Anti-obesity drug prescribing pattern to the young people in primary care in India.

2. METHODOLOGIES

In population-based studies, body mass index (BMI) is the identifying and evaluating factor for overweight and obesity determination. BMI is calculated as weight in kilograms divided by the square of height in meters. In the present study the data was searched as per the predefined schedule from different databases. Further cleaning and merging of the databases was carried out. The study comprises of the patients on Orlistat, Sibutramine or Rimonabant drug therapies for the treatment of obesity. The co-morbidities associated with obesity were also examined in the dataset for the study subjects. The search for obesity related co-morbidities was restricted to hypertension, depression, metabolic syndrome, polycystic ovarian syndrome and dyslipidaemia.

3. RESULTS AND DISCUSSION

A total of 450 patients were found in the study area receiving a total of 1,045 prescriptions for anti-obesity drugs. There is no single prescription found for Rimonabant drug during the study period. Therefore, analysis only refers to the cases consuming Orlistat and Sibutramine (Figure 1). The drug Orlistat made up 78.51% of the total prescription (n=1,045; 1,045/1,331).

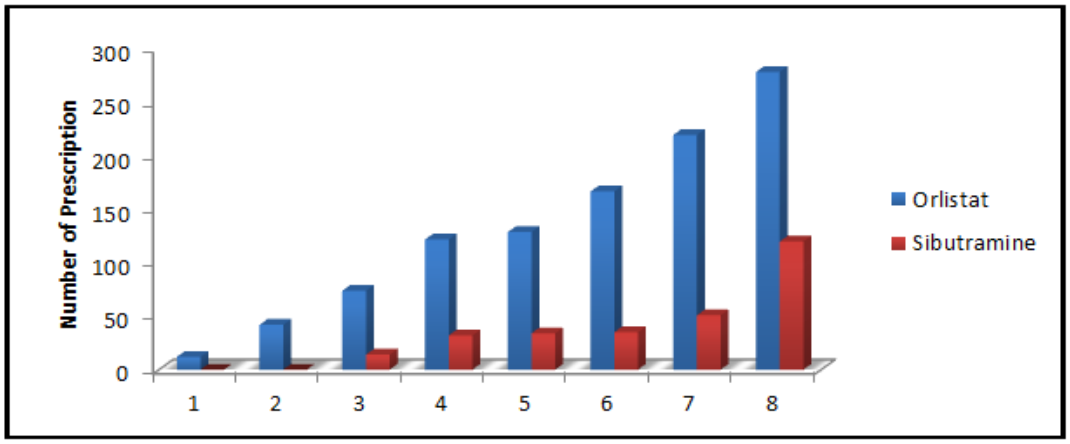

Fig-1: Number of anti-obesity prescriptions to patients

During the study phase it was observed more females in the study populations in comparison to males. The female percentile in the study population was 80.88% and that of the male were only 19.12%. Throughout the study, the number of patients who received an anti-obesity drugs increases steadily specifically in female population (Table 1). Both the Orlistat and Sibutramine based prescriptions increases progressively during the study phase.

Table-1: Age-specific prevalence of anti-obesity drug prescribing

Age	Male	Female	Overall	Male	Female
				Prevalence per 1000 per year	Prevalence per 1000 per year
10	29	14	43	2.9	1.4
11	37	52	89	3.7	5.2
12	19	5	24	1.9	0.5
13	12	67	79	1.2	6.7
14	10	12	22	1	1.2
15	41	78	119	4.1	7.8
16	38	63	101	3.8	6.3
17	84	32	116	8.4	3.2
18	67	54	121	6.7	5.4
19	95	12	107	9.5	1.2
20	23	61	84	2.3	6.1
21			0	0	0
22			0	0	0
23			0	0	0
24		45	45	0	4.5
25	60	34	94	6	3.4
26			0	0	0
27		47	47	0	4.7
28			0	0	0
29		40	40	0	4
30	28	172	200	2.8	17.2
Total	**543**	**788**	**1331**		

Out of total 788 female and 543 males population under study the use of anti-obesity drugs increases with time. With the increasing age, prescriptions were found to be increased particularly from 14 years onwards in both genders. The use of Orlistat has the mean duration of 3 months in comparison to Sibutramine with mean duration of 6.5 months. Within the first month of treatment 27% of the patients on Orlistat discontinued while 35% of the Sibutramine consuming patients discontinued the drugs therapy (Figure 2).

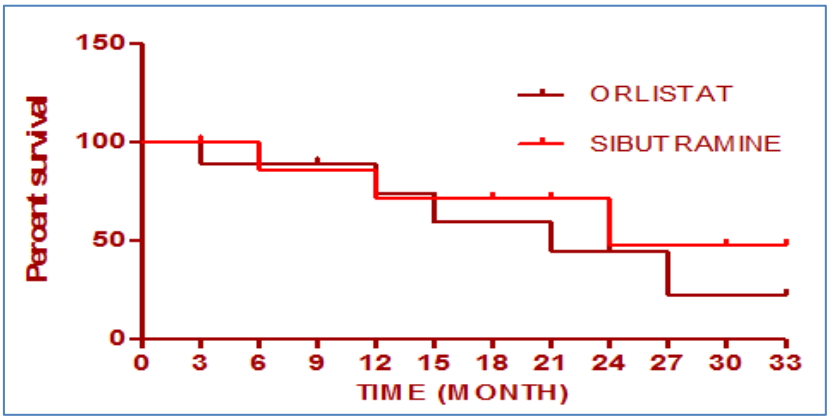

Fig-2: Kaplan-Meier survival curves for patients who received anti-obesity drug treatment

The remaining 30% and 40% respectively on Orlistat and Sibutramine continued the treatment for more than 6 months. 23 patients in the study area were detected to be diabetic hence they were treated with anti-diabetic drugs (either insulin or oral hypoglycemic drugs).

The patients treated within the study time also showed the co-morbidities (Figure 3) such as diabetes mellitus (4.9%), depression (28.5%), hypertension (2.2%), generalized anxiety disorder (8.5%) and polycystic ovarian syndrome (6.1% only in case of female patients).

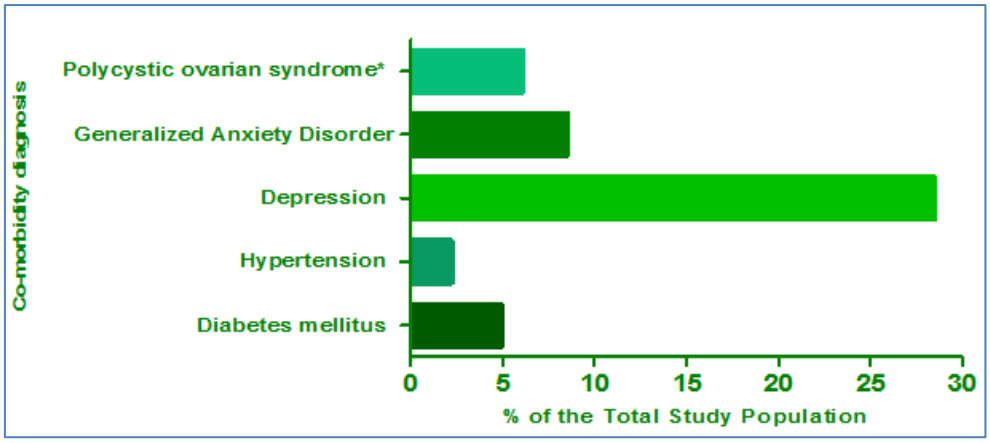

Fig-3: Selected obesity-related co-morbidities within the population treated with anti-obesity drugs

The present study suggested the increased use of anti-obesity drugs with time. The results of the study confirmed that approximately 0.1 per 1000 were being prescribed anti-obesity drugs. The utilization of off-labeled anti-obesity drugs was also observed during the study period. This off-labeled drug utilization was discarded much before the appearance of clinically significant benefit occurs in the patients. Only 38% of orlistat patients and 46% of sibutramine patients remained on the drug for longer than 3 months. The time frame was considered generally as an adequate time to ascertain whether significant weight loss has occurred or not.

4. LIMITATIONS OF THE STUDY

The study had some limitations. Only prescriptions that were prescribed and dispensed by physicians were incorporated in the study. The clinical information of patients during study covered was time bound. Various herbal products and appetite suppressants that can be used to control weight were also not included in the study.

5. CONCLUSIONS

The clinical based study evidenced that prescriptions of off-label anti-obesity drugs in children and adolescents have dramatically increased with time. However, the majority of these drugs were quickly discontinued before the appearance of clinical benefit. This signifying, that the drugs were poorly tolerated or less efficacious, when used in young people, in contrast to findings from clinical trials. The premature discontinuation of treatment in this study is unclear. Further research into the long-term efficacy and safety of anti-obesity drugs in children and adolescents is needed. In addition, a further study should investigate the reasons for early discontinuation of these drugs in this population.

6. ACKNOWLEDGEMENTS

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