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EVALUATION OF THE FREQUENCY OF GASTRO INTESTINAL DYSFUNCTION IN ACNE PATIENTS OF HYDERABAD AND SUBURBS, SINDH, PAKISTAN

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ABSTRACT

To evaluate the frequency of Gastro intestinal dysfunction in Acne patients of Hyderabad and suburbs, Sindh, Pakistan

A cross sectional study was conducted on total 400 patients with acne. The study was conducted in the out-patient department (OPD) of Dermatology Department, Liaquat Medical University Hospital Hyderabad. Patients were assessed clinically after taking history and physical examination. Data was analysed by statistical package for social sciences (SPSS) version 16.

The mean age was 20.5 ± 4.07. Males were 54% and females were 46%. Majority of patients (76%) were having Mild type of acne. History of gastrointestinal dysfunction was positive in

patients (72%). Constipation was found to be most common feature (8.5%), followed by epigastric pain, abdominal pain, anal itching, heart burn, nausea and vomiting.

There is higher positive history of gut dysfunction in patients with acne. Males with acne have little more Gastrointestinal Dysfunction as compared to females, which is statistically not significant.

Key words: Acne, Gastrointestinal Dysfunction

INTRODUCTION

Acne is a common chronic inflammatory disease of skin. It commonly presents with comedones, erythematous papules, pustules, nodules, cysts and draining sinuses which often results in scarring[1].Acnehas affects worldwide approximately 650 million people, or about 9.4% of the population, as of 2010[2]. It affects almost 90% of people during their teenage years and sometimes persists into adulthood[3-5]. Almost all ethnic groups are affected[6].Acne is usually caused by hormonal increase such as androgens and testosterone at the age of puberty, moreover certain other factors for instance diet, bacteria and rarely drugs also causes this disease [7]. Moreover it is a chronic disease that typically requires prolonged treatment.

Several small studies conducted over the past few years suggest that adherence to acne medications is often poor. In addition, data regarding the factors that positively or negatively impact adherence in patients with acne are sparse[8,9]. Moreover acne has also been reported with other health problems including gastro intestinal tract dysfunction such as (constipation, heart burn, post prandial bloating, epigastric pain) etc to name a few[10]. There are anecdotal reports regarding association of gastrointestinal dysfunction with acne. Various gastrointestinal dysfunction such as (constipation, abdominal pain, heart burn, abdominal cramps, diarrhea, bloating, excess flatulence etc. have been associated with acne. But till now no significant study has been conducted on this subject. We also observe that a significant number of patients presenting for treatment of acne had vary degree of gastrointestinal complaints. This prompted us to conducted study.

MATERIAL AND METHODS

A total number of 400 consecutive patients with acne, who attended the out-patient department (OPD) of dermatology, Liaquat University Hospital for the treatment of acne, were enrolled in this study. The study was conducted from July 2015 to December 2015. Ethical approval was sought from

Ethical Review Committee of university. Written informed consent was taken from all the participants. Patients of either gender above 12 years with acne were included in this study. Patients with significant gastrointestinal disease such as peptic ulcer, inflammatory bowel disease, irritable bowel syndrome, celiac disease and patients with severe systemic disorders were excluded from this study.

Clinical Assessment: Patients were assessed clinically by history and physical examination.

History: After recording demographic variables the detailed of patients were taken including age of onset of disease, duration of disease, drug history and family history of the disease and history of gastro intestinal complaints such as (epigastric pain, abdominal pain, post prandial bloating, excess flatulence, heartburn, nausea, vomiting, symptoms of GERD and bowel habits which included the frequency of defecation, consistency, straining, and colour of stool was carried out.

Physical Evaluation: A detailed examination was conducted to note the type/severity and site of acne along with body habitus.

Data was entered and analysed by statistical package for social sciences (SPSS) version 16. Continuous variable like age is presented as mean and standard deviation. Categorical variables like Gastrointestinal dysfunction symptoms are presented in simple descriptive statistics. Chi square test was applied between gender and Gastrointestinal dysfunction patients to check statistical difference.The level of significance was set to ≤ 0.05 along with 95% Confident Interval.

RESULTS:

The mean age was 20.5 ± 4.07. Males were 54% and females were 46%. 52% male patients with acne were suffering from GastrointestinalDysfunction where as 48% female patients with acne were suffering from Gastrointestinal dysfunction which is statistically not significant (Table-1). Majority of patients (76%) were having Mild type of acne followed by Moderate and severe (Table-2). History of gastrointestinal dysfunction was positive in patients (72%)(Figure-1).Constipation was found to be most common feature (8.5%), followed by epigastric pain (5.5%),abdominal pain (4.5%), anal itching (4.0%), heart burn (3.5%), nausea and vomiting (3.5%), post prandial bloating (2.0%), excessive flatulence (1.5%) (Figure-2).

Table-1 Association of Gender with Gestrointestinal Tract (GIT) disturbance

GENDER		GIT DISTURBANCE		Total	P-VALUE
		YES	NO		
	Male	150	66	216	
		52.1%	58.9%	54.0%	
	Female	138	46	184	0.216
		47.9%	41.1%	46.0%	
Total		288	112	400	
		100.0%	100.0%	100.0%	

Table-2 Frequency of Acne type according to severity

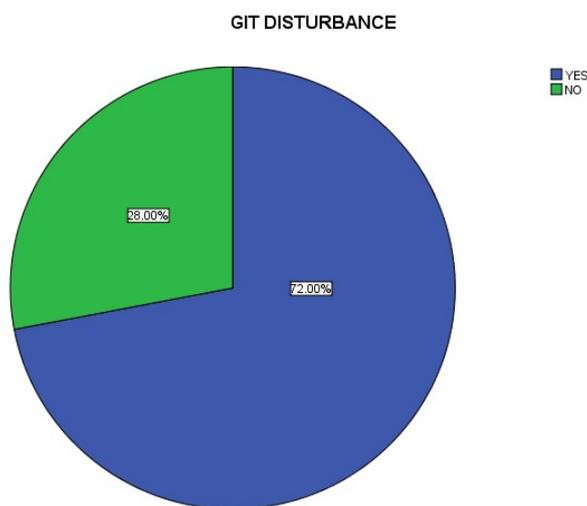| Type of severity	Frequency	Percent
Mild	304	76.0
Moderate	72	18.0
Severe	24	6.0
Total	400	100.0

Figure 1: Frequency of Gastrointestinal Dysfunction
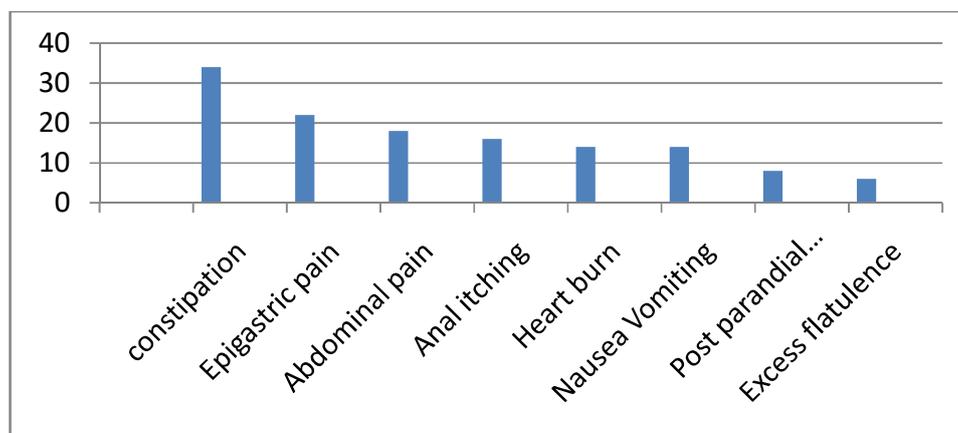

Figure 2: Frequency of Gastrointestinal Dysfunction features

DISCUSSION

Acne has long been considered as cutaneous disease with no systemic relevance and treated accordingly. With time the researchers began to realize its causal association with systemic diseases[11]. Now there is ample number of publications attesting relationship of acne with gastrointestinal disorders.[12,13] Being students of dermatology with exposure to patients with skin diseases we also came across many patients with acne who had significant gastrointestinal complaints. This prompted us to carry out this research.

Our aim was to ascertain causal and contemporary relationship of acne with gastrointestinal disorders. This would serve two purposes; first complete amelioration of acne would be possible by concomitant management of gut dysfunction. Second acne may serve as a cutaneous marker for underlying gut dysfunction.

The results of this study affirm the previous research done on this subject. We have avoided to single out one or other specific GIT diagnosis associated with acne. Rather we have focussed on the dysfunction arising out of these diseases. This is also the reason we here have used the term gut dysfunction instead of labelling specific diagnosis. Any structural or functional GIT disease may affect digestion, absorption or alter bowel flora and produce related symptoms and signs. Off course delineation of some specific GI disease needs elaborate laboratory work up and another study.

Out of 400 patients recruited in our study 72% were suffering from one or more gut disorder. There were 6% patients in our study who had at least single gut complaint. 17 % patients had two complaints, while the remaining had multiple complaints.

There were 41% patients in whom GIT complaints either preceded acne or appeared concomitantly. However in 37% patients the gut symptoms followed acne. The time interval in these patients was 2-3 weeks average.

Constipation was the dominant disorder in our patients being complained by 8.5% patients followed by followed by epigastric pain 5.5%, abdominal pain 4.5%, anal itching 4.0%, heart burn 3.5%, nausea & vomiting 3.5%, post prandial bloating 2.0% and excessive flatulence(1.5%). There are multiple mechanisms by which gut disorders may play etio-pathogenic role in the development of acne. The most widely accepted is the activation of innate immune response. The disruption of gut mucosal barrier paves way for entry of noxious agents (food or bacteria etc) into the submucosa of

gut epithelium and their subsequent uptake by antigen presenting cells (APCs). The APCs present these processed antigens to lymphoid tissues within gut known as gut-associated lymphoid tissue (GALT). The activated lymphocytes produce various inflammatory cytokines e.g. interleukin-6 (IL-6) and tumour necrosis factor alpha (TNF-a), interferon gamma and LOX-2. These cytokines initiate and subsequently perpetuate inflammatory response within pilosebaceous ducts thus producing lesions of acne.

Other mechanisms include altered fat metabolism with generation of inflammatory fatty acids in sebum and altered squalene toFFA ratio.

Diminished excretion of androgens through GIT leads to enterhepatic recirculation of these metabolites which act to stimulate sebaceous glands and increased sebum production.

CONCLUSION:

This study well highlights the causal association of acne with gut disorders. There is higher positive history of gut dysfunction in patients with acne. Males with acne have little more Gastrointestinal dysfunction as compared to females, which is statistically not significant. Proper management of acne needs evaluation of gut dysfunction and its treatment.

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