

PREVALANCE AND MANAGEMENT OF LACTOSE INTOLERANCE IN PATIENTS WITH DIARRHOEL IRRITABLE BOWEL SYNDROME IN GASTROENTEROLOGY DEPARTMENT OF A TERTIARY CARE HOSPITAL.

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ABSTRACT

Background: Irritable bowel syndrome (IBS) is a common and global gastrointestinal disorder. Diarrhea-predominant IBS (IBS-D), a subtype of IBS which can present some similar symptoms with lactose intolerance (LI) such as abdominal pain, bloating, flatulence, and diarrhea. The prevalence of LI in patients with D-IBS is unclear. In many cases due this overlapping of symptoms most of the patients with LI are mistaken for D-IBS And receive inappropriate treatment. Moreover, in developing countries like India, LI is considered as minor clinical importance. Hence we proposed a hypothesis, to assess the prevalence of LI in D-IBS and its management. **Objective:** Our objective is to find the prevalence of LI in D-IBS and to achieve the effective management strategies for LI. **Materials and Methods:** This is a prospective observational study carried out at the Gastroenterology O.P Department of Princess Esra Hospital, Owaisi group of hospitals Hyderabad for 6 months. We recruited 65 D-IBS patients after the informed consent and Institutional Ethics Committee approval. We determine the prevalence of LI in D-IBS. We used EXCEL to carry out CHI-square, Odds ratio, Mean and Standard Deviation at P=0.05 to identify the association of Age, Gender and other factors causing LI. External lactase enzyme supplement in the name of YAMOO was given to LI positive patients and they were followed up for a period of 10 days. **Result:** Our study revealed that the prevalence of LI was found to be 43% (28 subjects OUT OF 65 subjects) in D-IBS patients. The prevalence was 1.69 times higher in females compared to that of male, the risk was found to be 3.63 times higher in the age group between 60-80 years which were statistically not significant. External lactase enzyme supplement was given to LI positive patient's, in whom symptoms such as abdominal pain, diarrhea, bloating and flatulence were significantly reduced indicates the effectiveness of YAMOO in treatment of LI. **Conclusion:** The prevalence of LI was found to be higher in female than in male and considerably higher risk was in age group between 60-80 years. Treatment is relatively simple and aimed at reducing or eliminating the dairy products which may result in deficiency of calcium and other nutritional requirement, hence our study conclude management of LI with external lactase enzyme supplement(yamoo) is effective and eliminating the consequences that may occur due to elimination of dairy products from diet.

KEYWORDS: Diarrheal-Irritable bowel syndrome, lactose intolerance, observational study, yamoo.

INTRODUCTION

Gastrointestinal (GI) disorders are frequently seen in primary care settings and commonly include lactose intolerance (LI) and irritable bowel syndrome (IBS). Irritable bowel syndrome (IBS) is one of the most common chronic disorders causing patients to seek medical treatment. It exerts a significant economic burden and is responsible for considerable morbidity around the world. Some controversy exists today as to whether IBS is a distinct syndrome or a grouping of several chronic GI disorders.^[1] Irritable Bowel Syndrome

(IBS) is a group of functional bowel disorder in which abdominal pain or discomfort is associated with defecation or a change in bowel habit and features of disordered defecation.^[6] There is no definitive investigation as no biomarker has been found, so IBS is diagnosed clinically. The earliest reports describing IBS are from the turn of the 19th and 20th century. At this time, diagnosis was only made by exclusion of malignant, inflammatory, or infectious disease after full investigation and "extensive unsuccessful surgeries." IBS remained "frequently misdiagnosed and poorly

understood” into the 1970s, with the problem of unsuccessful, or unnecessary, surgery continuing.^[7] IBS subtypes include Constipation predominant (IBS-C) (TYPE 1 &2), Diarrhoea-predominant (IBS-D) (TYPE 6&7) and IBS with predominant irregular (mixed diarrhoea/constipation) bowel habits (IBS-M)(TYPE 3,4 & 5). IBS-U (unclassified; the symptoms cannot be categorized into one of the above three subtypes). IBS subtypes are classified according to the 7-point Bristol Stool Form Scale, which is based on stool appearance ranging from type 1 (separate hard lumps like nuts, hard to pass) to type 7 (watery, no solid pieces, entirely liquid) and is considered a reliable marker for colonic transit.^[8]

Methodology

Materials and methods

Study design

A Prospective Observational Study.

Study Site

Gastroenterology Outpatient Department of a Tertiary care Hospital.

Study Duration

6 months

Sample Size

65 subjects.

Study criteria

Inclusion criteria

- Patients of all ages other than infants and neonates.
- Patients of both gender (Male and Female).
- Patient presenting with but not limited to abdominal cramping, abdominal bloating, diarrhea, vomiting and flatulence.

1. Patients Categorization Based On Gender Distribution.

	Male	Female	Total
D-IBS without LI	22	15	37
D-IBS with LI	13	15	28
		Gender distribution	

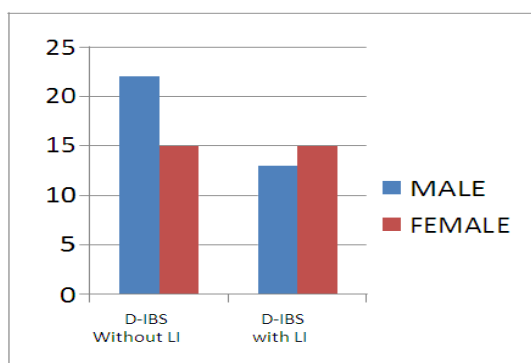


Fig 1: Gender distribution

Exclusion Criteria

- Pregnant/lactation women.
- Patient presenting with other organic bowel diseases such as Inflammatory Bowel disease, Infectious diarrhoea.
- Patients who are not willing to participate in the study.
- Patient presenting with Co-morbid conditions such as IHD, DM, CKD, etc.
- Patient on prolonged drug use for any other clinical problem.
- Patients with anxiety, depression and other psychological disorders

Source of Data

The patient's data collected using a case report form which includes the following details: Patients demographic details, Past medical history, Co-morbid conditions

Laboratory data: Stool examination, Ultrasound of Abdomen.

The treatment chart includes: Drug Name, Dose, Route of Administration, Frequency.

Symptomatic assessment is done according to ROME4 criteria.

RESULTS AND DISCUSSION

1. Descriptive Analysis

Data was collected and analyzed. Descriptive statistical analysis was carried out using MS excel spread sheet to generate graphs, tables etc., for the study.

2. Age Distribution

AGE	D-IBS without LI	D-IBS with LI	Total
0-10	1	0	1
11-20	0	0	0
21-30	13	6	19
31-40	9	10	19
41-50	3	6	9
51-60	6	5	11
61-70	5	0	5
71-80	0	1	1

Age distribution

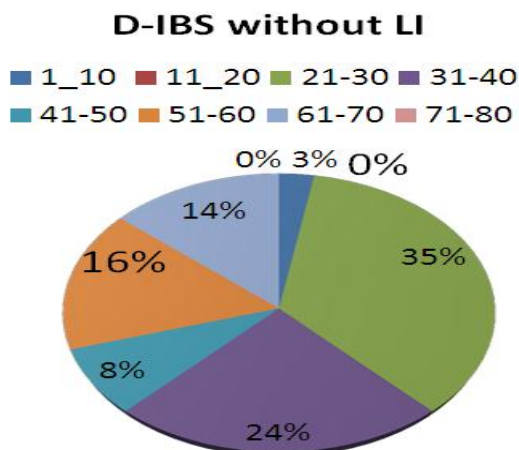


Fig. 2: Age distribution (D-IBS without LI).

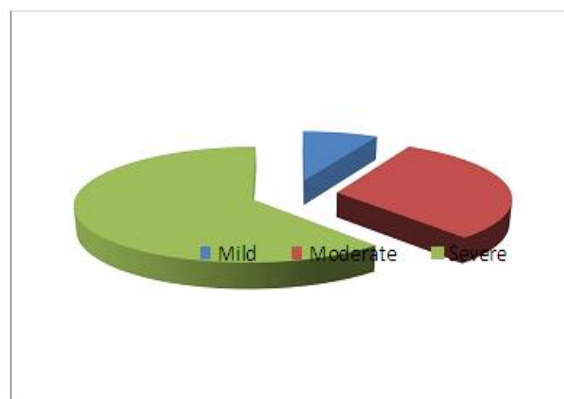


Fig. 3: Severity assessment of subjects.

3. Severity Assessment

Severity Assessment	No. of Patients
Mild	5
Moderate	20
Severe	40

2. Inferential Analysis

1. Demographic Characteristic of Patients With D-Ibs Without Li And D-IBS With LI.

Characteristics	D-IBS without LI	D-IBS with LI	P-VALUE
MEAN AGE \pm SD	39.2 \pm 1.73	40.85 \pm 2.31	0.02
GENDER(male/female)	22/15	13/15	0.0119
Married/Unmarried	25/12	22/6	0.1780

Demographic characteristic of patients with D-IBS without LI and D-IBS with LI

(among 65 subjects of DIBS included in the study, 37.

subjects are found to be suffering from DIBS without LI, the mean ae is 39.2 \pm 1.73 and 22 of these subjects are male remaining 15 are females.

2. Frequency of Lactose Intolerance and Correlation With Age and Gender.

	Subjective LI	ODD's					95% CI for		
		YES	NO	RATIO	odds		CHI-SQUARE	DF	P-value
GENDER	MALE(35)	13	22	1.69	0.628	4.559	1.089	1	0.29
	FEMALE(30)	15	15						
AGE	1-20(1)	0	1	-	-	-	3.64	3	0.303
	21-40(38)	16	22	-	-	-			
	41-60(20)	11	9	0.59	0.19	1.77			
	61-80(6)		5	3.63	0.38	3.42			

Frequency of lactose intolerance and correlation with age and gender (L-lower, U-upper, CI-confidence interval, DF-degree of freedom).

The results in above table shows that prevalence was significantly higher in females (15, 50%, P=0.296). In

fact, females are 1.69 times more likely to have Lactose Intolerance when compared to male (95% CI= 0.68-4.559) but not statistically significant. The prevalence is also higher in 21-40 and 41-60 years age group but not statistically significant (P= 0.303).

4. Prevalence Of Lactose Intolerance According To Smoking Status

	Subjective LI	ODD's			95% CI for				
		YES	NO	RATIO	odds		CHI Square	DF	P-value
SMOKERS(65)	YES	6	20	4.13	1.421	13.09	7.068	1	0.007
	NO	22	17						

Prevalence of lactose intolerance according to smoking status.

The prevalence of lactose intolerance in relation to

smoking the higher prevalence was found in non-smokers (22, 78.5%) and this association was highly significant ($P=0.007$).

4. Distribution Of Drug Among All The Subjects.

DRUGS		SUBJECTIVE		ODD's RATIO	95% CI for odds		CHI SQUARE	DF	P-value
		LI			L	U			
		YES	NO						
Hyocine butyl bromide	YES	22	12	0.1309	0.042	0.407	13.60	1	0.001
	NO	6	25						
Ondansetron	YES	14	18	0.947	0.354	2.529	0.011	1	0.914
	NO	14	19						
Multi- vitamin	YES	17	22	0.949	0.348	2.587	0.010	1	0.918
	NO	11	15						
Rabeprozole	YES	9	19	2.22	0.801	6.192	2.398	1	0.121
	NO	19	18						
Velgut	YES	13	15	0.786	0.292	2.119	0.225	1	0.634
	NO	15	22						

Distribution of drug among all the subjects

The relation of medication use in the subjects with lactose intolerance is demonstrated in above table which shows that hyoscine butyl bromide(22,78.5%) is more commonly used drug in subjects with lactose intolerance other than yamoo and rifaximin which are used in all subjects of lactose intolerance followed by multivitamin (17,60.7%), ondansetron (14,50%), velgut (13,46.42%) and Proton Pump Inhibitor(9,32%) but difference is significant only for first group(Odds Ratio 0.13,95% CI=0.04-0.407,P=0.001).

DISCUSSION

The study report the prevalence of LI in D-IBS patients presented at the gastroenterology OP department. The patients were assessed to have D-IBS by using ROME-IV criteria and objective assessment was done to rule out other GI disorders such as IBD, PUD etc, by using tests such as STOOL FOR OCCULT BLOOD and BMFT. Presence of negative test report for stool for occult blood indicates the subject to be having D-IBS.

In our study, the prevalence rate was higher in the age group between 20-40 years where as risk was found to be 3.42 times higher in age group between 60-80 years. As this study is small and carried out over a short period of time despite the risk was found to be higher in age group 60-80 years but in our study more no. of subjects were seen between the age group of 20-40 years. If the study was conducted for longer duration of time with larger no. of subjects there might be a significant association between the risk age group and prevalence

CONCLUSION

The prevalence of LI was found to be higher in female than in male and considerably higher risk was in age group between 60-80 years. Treatment is relatively simple and aimed at reducing or eliminating the dairy products which may result in deficiency of calcium and other nutritional requirement, hence our study conclude

management of LI with external lactase enzyme supplement(yamoo) is effective and eliminating the consequences that may occur due to elimination of dairy products from diet.

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DECLARATIONS

The authors have disclosed no Conflict of interest, financial or otherwise.

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