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Study the Prevalence of Gastro esophageal Reflux Disease in Patients of Bronchial Asthma in Western Uttar Pradesh

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I. Background

Gastro-esophageal reflux disease (GERD) is a chronic disorder of the upper gastrointestinal tract with global distribution. GERD leads to symptoms of heartburn and regurgitation, these defined esophageal symptoms are in dichotomy with extra-esophageal symptoms of GERD[1]. These extra-esophageal symptoms include respiratory manifestations similar to the features of asthma. GERD often coexists with asthma and is often responsible for the repeated exacerbations.Bronchial asthma has been defined by GINA as a "Chronic inflammatory disorder of the airways in which many cells and cellular elements play a role[2]. 300 million individuals currently suffering from asthma worldwide[3,4]. In India, there is limited data on the exact prevalence of GERD in bronchial asthma. Little is known regarding the relationship between the degree of these 2 afflictions.

Objective: To investigate the prevalence of GERD in adult patients with bronchial asthma.
METHODS: Data of patients with asthma were collected prospectively using:

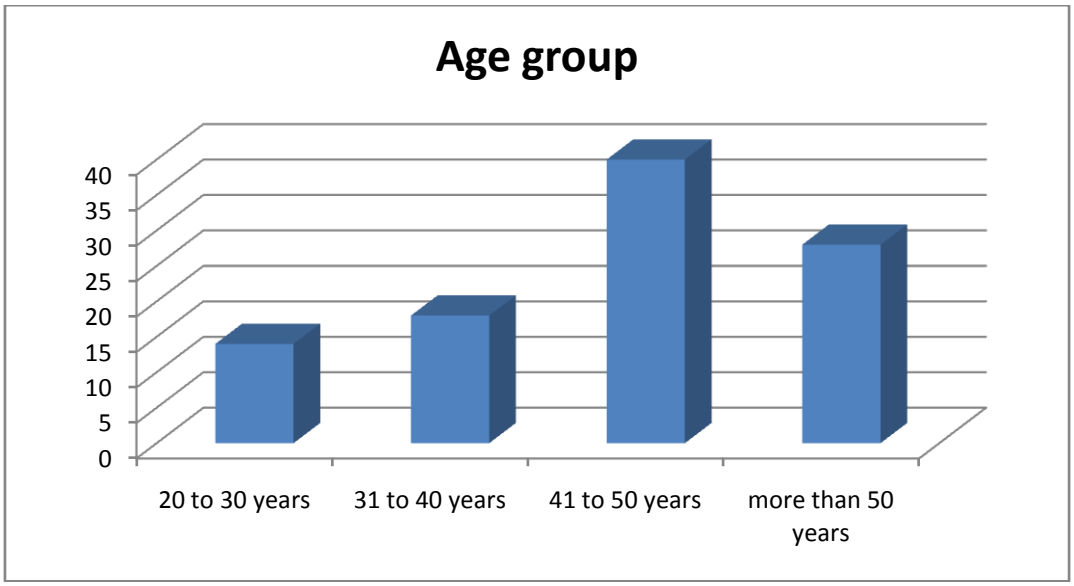
INCLUSION CRITERIA:
- Cases of bronchial asthma of 15 years to 75 years were included
  - Asthma was diagnosed on basis of clinical symptoms, signs and pulmonary function tests
  - Showing airway reversibility of 12 percent and 200ml in forced expiratory volume in 1 secondFEV1[5].

EXCLUSION CRITERIA:
- Respiratory disorders other than asthma
- Asthmatic patients taking any medications known to cause upper gastrointestinal adverse effects like oral steroids and theophyllines.
- Known esophageal disease such as cancer , achalasia stricture.
- Had undergone previous upper GI surgery.
- Active and ex-smoker with other systemic with 10 pack years of smoking and above.
- Asthma associated with other systemic diseases like COPD ,ischemic heart disease
- Cardiac asthma patients
- Patients requiring intensive care
- Patient on H2 receptors antagonists or proton pump inhibitors presently or within last 4 weeks
- Patients on NSAIDS

OBSERVATIONS AND RESULTS: As seen in the table, the most common age group in study population was 41 to 50 years (40%) followed by more than 50 years (28%) and 31 to 40 years (18%).

Age group	Frequency	Percent
20 to 30 years	14	14
31 to 40 years	18	18
41 to 50 years	40	40
more than 50 years	28	28
Total	100	100

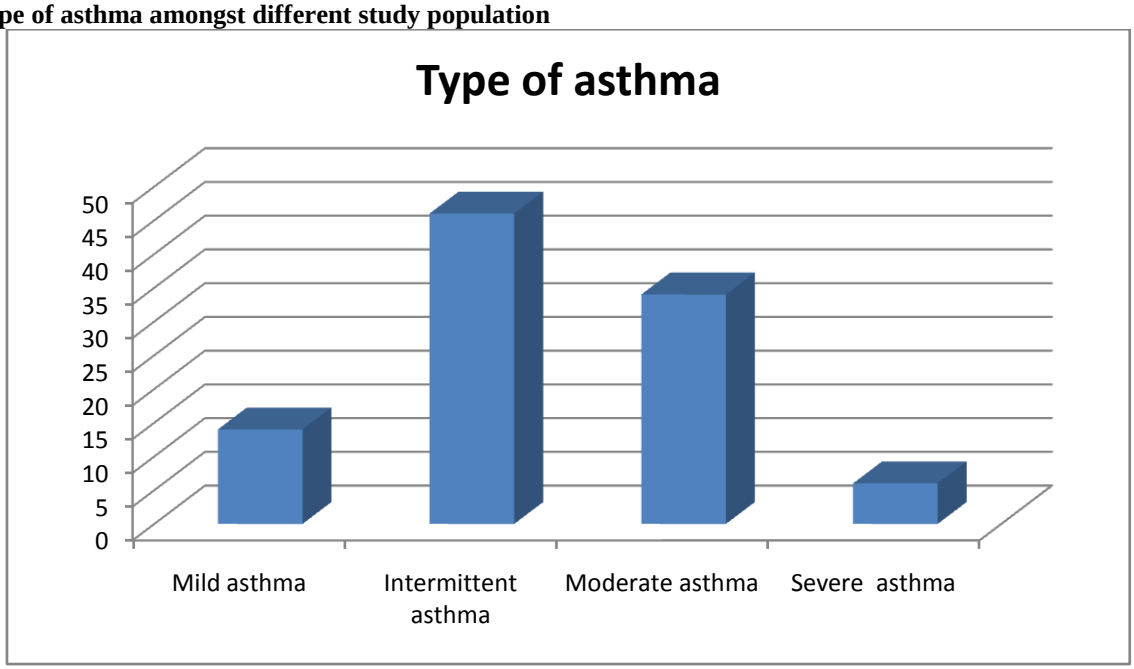
Age distribution amongst different study population



As seen in the table, Intermittent asthma (46%) was the most common type of asthma found in the study population followed by Moderate asthma (34%), Mild asthma (14%) and Severe asthma (6%).

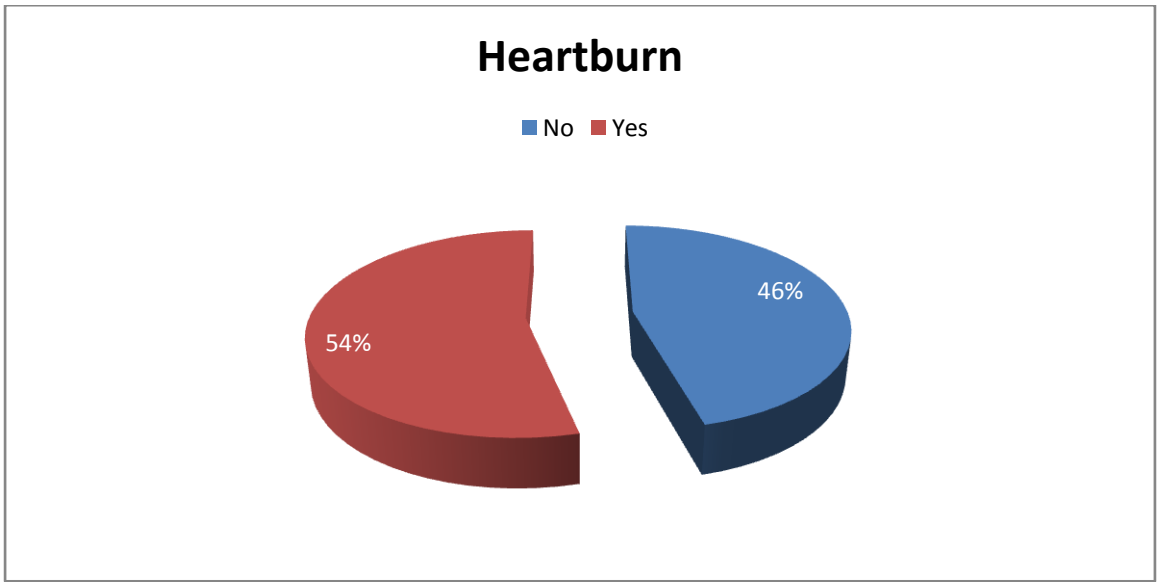
Type of asthma	Frequency	Percent
Mild asthma	14	14
Intermittent asthma	46	46
Moderate asthma	34	34
Severe asthma	6	6
Total	100	100

Type of asthma amongst different study population



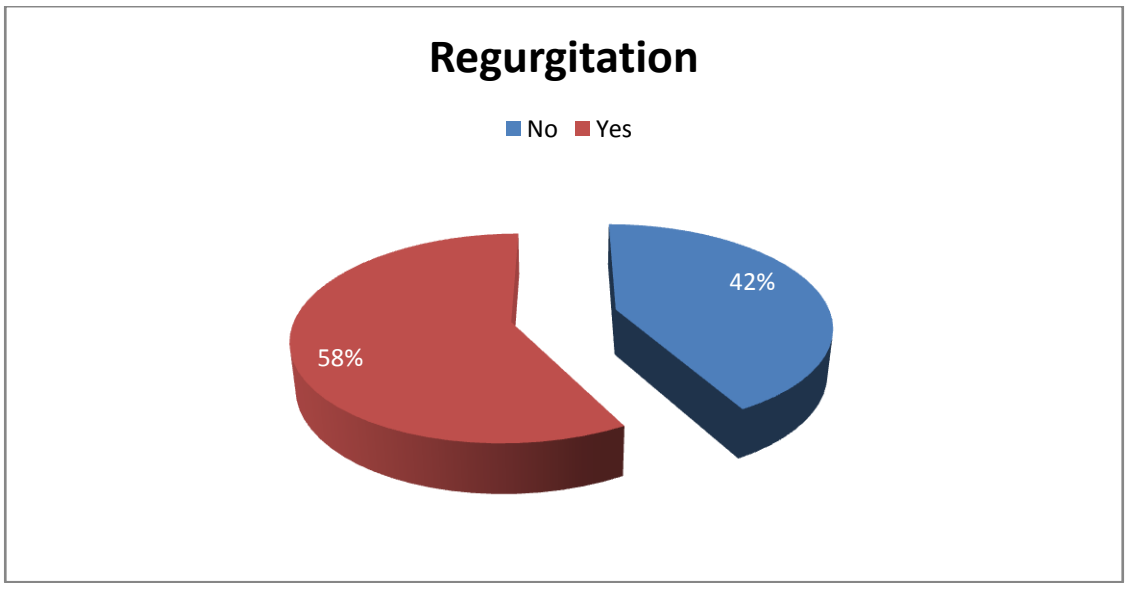
Heartburn was observed in 54% of study population

Heartburn	Frequency	Percent
No	46	46
Yes	54	54
Total	100	100



Regurgitation was observed in 58% of study population

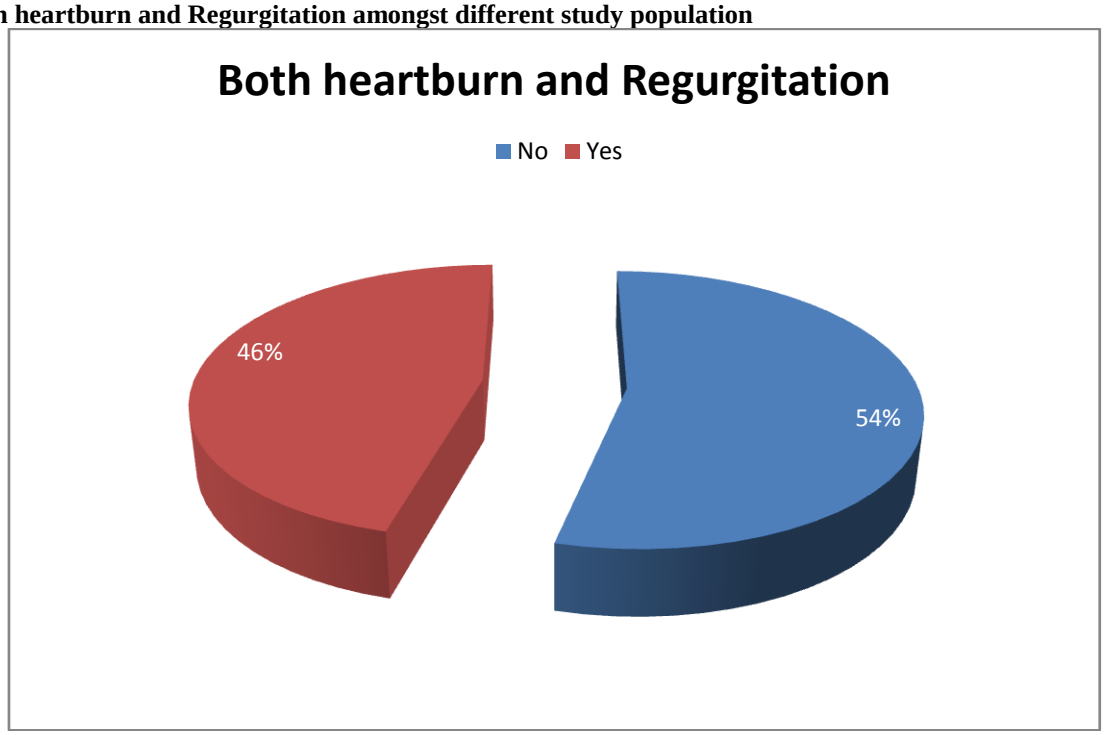
Regurgitation	Frequency	Percent
No	42	42
Yes	58	58
Total	100	100



Both heartburn and Regurgitation was observed in 46% of study population.

Both heartburn and Regurgitation	Frequency	Percent
No	54	54
Yes	46	46
Total	100	100

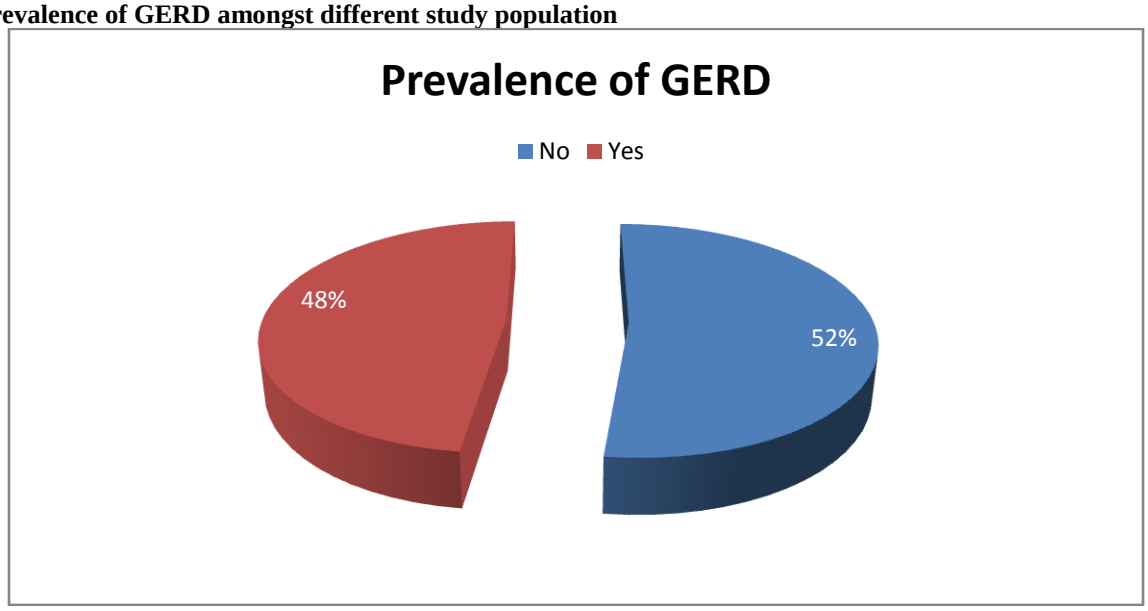
Both heartburn and Regurgitation amongst different study population



Prevalence of GERD[6] was observed in 48 % of study population

Prevalence of GERD	Frequency	Percent
No	52	52
Yes	48	48
Total	100	100

Prevalence of GERD amongst different study population



Mean age and BMI amongst different study population

Mean age and BMI	Mean ± SD
Age	44.69 ± 12.1
BMI	27.05 ± 5.22

As seen in the above table, the mean age and BMI was 44.69 ± 12.1 years and 27.05 ± 5.22 in cases of study population

Mean Spirometry parameters amongst different study population

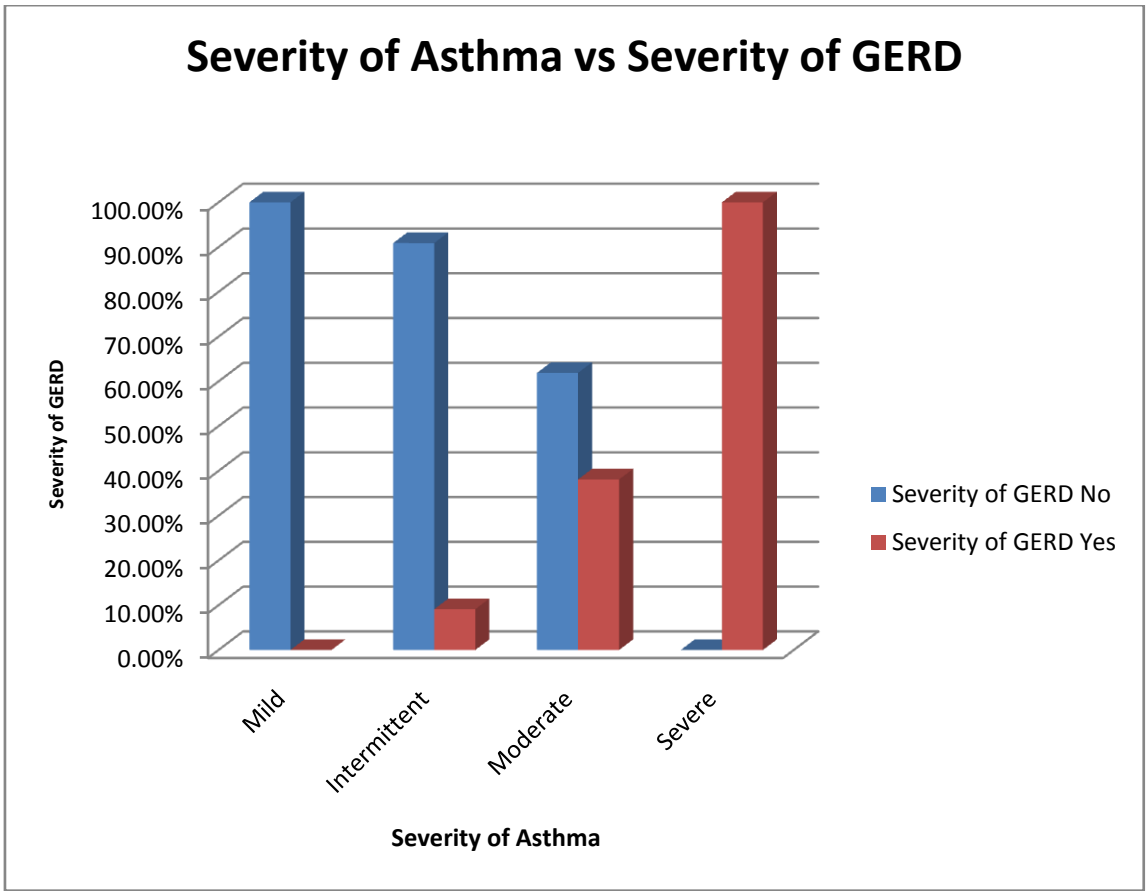
Mean Spirometry parameters	Mean ± SD
FEV1%	73.25 ± 21.72
FVC%	82.40 ± 22.11
FEV1/ FVC%	73.02 ± 10.28

As seen in the above table, the mean FEV1% , FVC% and FEV1/ FVC% was 73.25 ± 21.72 82.40 ± 22.11 and 73.02 ± 10.28 of study population

			Severity of GERD		Total
			No	Yes	
Type of asthma	Mild	Count	29	0	29
		%	100.0%	0.0%	100.0%
	Intermittent	Count	40	4	44
		%	90.9%	9.1%	100.0%
	Moderate	Count	13	8	21
		%	61.9%	38.1%	100.0%
	Severe	Count	0	6	6
		%	0.0%	100.0%	100.0%
Total		Count	82	18	100
		%	100.0%	100.0%	100.0%

Chi square test, P Value- 0.0001

As seen in the above table, Severe GERD was observed in 0% of mild Asthma, 9.1% of Intermittent asthma, 38.1% of Moderate asthma and 100% of Severe asthma and this difference was statistically significant.



II. Conclusion

- The most common age group in study population was 41 to 50 years (40%) followed by more than 50 years (28%) and 31 to 40 years (18%).
- Intermittent asthma (46%) was the most common type of asthma found in the study population followed by Moderate asthma (34%), Mild asthma (14%) and Severe asthma (6%)[7].
- Heartburn was observed in 54% of study population.
- Regurgitation was observed in 58% of study population
- Both heartburn and Regurgitation was observed in 46% of study population.

- Prevalence of GERD was observed in 48 % of study population
- The mean age and BMI was 44.69 ± 12.1 years and 27.05 ± 5.22 in cases of study population.
- The mean FEV1% , FVC% and FEV1/ FVC% was 73.25 ± 21.72, 82.40 ± 22.11 and 73.02 ± 10.28 of study population.

Severe GERD was observed in 0% of mild Asthma, 9.1% of Intermittent asthma, 38.1% of Moderate asthma and 100% of Severe asthma and this difference was statistically significant. More than one third of adult asthmatic patients have GERD. These patients do not often have typical reflux symptoms such as heartburn or regurgitation. As the severity of bronchial asthma increases, the severity of GERD also increases. However, the presence of typical reflux symptoms in an asthmatic patient does not seem to guarantee the presence of pathologic acidic esophageal reflux.[8]

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