INTRODUCTION
The present study, carried out mainly to analyze the factors associated with different vocal fold lesions, also aims at diagnosing various benign vocal fold lesions at an early stage by their demographic profile and clinical presentations. Findings, along with treatment modalities, were tabulated and analyzed. Benign vocal fold lesions that we otorhinolaryngologists deal in the current scenario are vocal nodules, vocal polyps, intrachordal cysts, Reinke’s edema, laryngopharyngeal reflux disease, contact ulcers, laryngeal webbing and papillomatosis. Benign vocal fold lesions can be broadly classified into neoplastic and non-neoplastic lesions. Benign, non-neoplastic lesions make up the majority of vocal fold lesions. Hoarseness of voice is a common presentation. It could be the initial or the only symptom of an underlying malignancy, and thus requires a detailed examination. Ideally the term “Hoarseness” refers to laryngeal dysfunction caused by abnormal vocal cord vibration. Normal voice requires laryngeal function to be coordinated, efficient, and physiologically stable. Any imbalances of this delicate system can affect phonation. Benign lesions of the vocal folds can cause imbalances in this system, which can result in varying degrees of dysphonia. Bernoulli’s principle explains that when air passes from one large space to another i.e. from lungs to Pharynx, a vibratory pattern is developed at the vocal cords and the resultant sound produced is appreciated as voice.3 Cohen4 in 2011, when comparing gender differences, found 11% of patients with dysphonia had benign vocal pathology listed as a diagnosis. Most of the lesions are associated with vibratory injury of the vocal cords. But, multiple factors can also lead to the development of these lesions. The most common ones include extroverts with a talkative personality and occupations with high voice demands.1 Though vocal nodule, also called singer’s nodule, screamer’s nodule, is not only associated with singers, and screaming people, but also associated with other factors that can potentiate vibratory injury like smoking, acid reflux, uncontrolled allergies, and infections. However, singers, who tend to vary their pitch and tone while singing in order to demonstrate their capability and uniqueness, lecturers, who are accustomed to continuous speaking for hours, and housewives especially, who, in the event of irritation, keep screaming at their young kids, especially during baby care, are the commonest affected people.

METHODS
Collected data included patient demographics, various benign vocal fold lesions and management modalities. Patients were separated into two cohorts. Group I included vocal nodule cases (n=20), and Group II, non-vocal nodule cases (n=37). Age, gender, side of involvement of vocal cord, and treatment strategies were statistically correlated with the two cohorts. Chi-square test was used for the purpose and significance level was assessed with P value <0.05. The study was retrospectively conducted to analyze benign vocal fold lesion cases examined between August 2016-2017 in Apollo Medical College, Chittoor, Andhra Pradesh India. A total of 57 cases were identified by the data received from medical records department of the institution. The received data was anonymised and unidentifiable in the results of the research, as names were not used when reporting individual data. Patients with history of hoarseness of voice as a predominant symptom or other complainants like cough, pain, foreign body sensation, dryness of throat and with a dominant history of vocal abuse, smoking or alcoholism were also included in the study. Patients with acute infections, carcinomas, vocal cord palsy or other neurological diseases were excluded from the study. The males comprised 66.7% of patients in the study and the commonest age group involved was 30-40 years. Vocal abuse was the leading risk factor in 80% patients.

RESULTS
The structural anomalies diagnosed are listed in table3. The vocal nodules were the commonest lesion seen (35%). The treatment strategies adopted have been highlighted in Table 4. Intra-operative and post-operative use of intravenous steroids was also found beneficial. The two cohorts were statistically analyzed using Chi-square test. Significance level was assessed with P value <0.05 (Table 5-8). The bilateral involvement in all the vocal nodule cases was found significant. The males comprised 66.7% of patients in the study and the commonest age group involved was 30-40 years (Table 1). Vocal abuse was the leading risk factor in 80% patients, rest were smokers and alcoholics. Hoarseness of voice was the predominant symptom in 83% patients followed by vocal fatigue. Bilateral vocal fold involvement was seen in 50% of the cases. Vocal abuse, smoking or alcoholism were included in the study. Patients with acute infections, carcinomas, vocal cord palsy or other neurological diseases were excluded from the study. The males comprised 66.7% of patients in the study and the commonest age group involved was 30-40 years. Vocal abuse was the leading risk factor in 80% patients.

KEYWORDS
Otorhinolaryngology, Benign, Vocal, Hoarseness, Dysphonia

Table 1: Age wise distribution.

<table>
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<tr>
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ABSTRACT
Hoarseness of voice was the predominant symptom in 83% patients followed by vocal fatigue. Bilateral vocal fold involvement was seen in 50% of the cases. All vocal nodule cases had bilateral vocal fold involvement. The vocal nodules were the commonest lesion seen (35%). Intra-operative and post-operative use of intravenous steroids was also found beneficial. Statistical analysis was done using Chi-square test. Significance level was assessed with P value <0.05. The bilateral involvement in all the vocal nodule cases was found significant. Voice therapy and cessation of smoking and alcohol can significantly reduce the incidence of these benign vocal fold lesions. It’s not only surgery that’s important in managing vocal fold lesions, but the post-operative care equally plays a vital role. The present study was carried out to analyze the factors associated with different vocal fold lesions and to diagnose various benign vocal fold lesions at an early stage by their demographic profile and clinical presentations. Patients with history of hoarseness of voice as a predominant symptom, cough, pain, foreign body sensation, dryness of throat and with a dominant history of vocal abuse, smoking or alcoholism were included in the study. Patients with acute infections, carcinomas, vocal cord palsy or other neurological diseases were excluded from the study. The males comprised 66.7% of patients in the study and the commonest age group involved was 30-40 years. Vocal abuse was the leading risk factor in 80% patients.

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RESULTS
The structural anomalies diagnosed are listed in table3. The vocal nodules were the commonest lesion seen (35%). The treatment strategies adopted have been highlighted in Table 4. Intra-operative and post-operative use of intravenous steroids was also found beneficial. The two cohorts were statistically analyzed using Chi-square test. Significance level was assessed with P value <0.05 (Table 5-8). The bilateral involvement in all the vocal nodule cases was found significant. The males comprised 66.7% of patients in the study and the commonest age group involved was 30-40 years (Table 1). Vocal abuse was the leading risk factor in 80% patients, rest were smokers and alcoholics. Hoarseness of voice was the predominant symptom in 83% patients followed by vocal fatigue (Table 2). Bilateral vocal fold involvement was seen in 50% of the cases. All vocal nodule cases had bilateral vocal fold involvement.

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therapy. But, larger ones required surgical approach (microlaryngeal surgery). However, post-operative voice therapy was recommended and found beneficial. Thus, surgical approach too required conservative management concurrently for better prognosis. Sustained administration (tablet prednisolone, 1 mg/kg bodyweight, followed by tapering of dose over 3 weeks) was an effective way of conservative management. However, as quoted earlier during this discussion, life style modification like cessation of smoking, avoidance of alcohol and spicy food, and going to sleep not less than two hours after food is equally important conservative management.

Most patients (more than half) with voice complaints are known to have benign vocal fold lesions.5 Brodnitz6 reported 45% of nodules, polyps or polypoidal thickenings. Kleinsasser7 also reported similar findings. In the present study, the commonest pathology was the presence of vocal nodules in 35% patients. Mahesh Chandra et al.8 reported an incidence of 28.57% and 24%, on vocal nodules and vocal polyps respectively, in their study. Kothy et al.9 reported similar results. In studies by Kambic et al.10 and Chopra et al.,11 the incidence varied from 68.3 to 16%. In the present study, 9% patients were diagnosed as having features of laryngopharyngeal reflux. These patients were diagnosed with associated symptoms like excessive cough (especially at night), frequent attempts of clearing throat, difficulty in swallowing food or liquids, sensation of foreign body in throat, and presence of heart burn, chest pain or indigestion. Otokinolaryngologists encountering reflux related disease cases in the present scenario is no more considered rare. Moreover, patients with oesophagitis are found to be at double risk of getting laryngitis than those who do not have it.12 Harding and Richter13 estimated the prevalence of GERD (Gastroesophagial reflux disease) associated cough and found it to be 10-40%. Classical symptoms of GERD are rarely presented these days by patients with GERD induced Otolaryngologic manifestations making diagnosis of such cases more challenging in the present scenario. Going by the quote „prevention is better than cure”, life style modification is required to prevent GERD related lesions. Modifications like quitting smoking and alcohol, keeping BMI (body mass index) <30, exercises, maintaining latent period between meal intake and sleep.

Chi-square test on the cohorts with various factors revealed the significance of bilateral involvement of vocal fold in vocal nodule cases. Thus, it can be inferred that, with the presence of bilateral vocal fold involvement, the probability of vocal nodule diagnosis goes high. However, one query is still unanswered, which is, how come vocal nodules are the only lesions that involve the vocal folds bilaterally when the risk factors, for the entire group of benign vocal fold lesions, are more or less the same? Maybe more research is required in this aspect.

CONCLUSIONS
Voice therapy and cessation of smoking and alcohol can significantly reduce the incidence of these benign vocal fold lesions. It’s not only surgery that’s important in managing vocal fold lesions, but life style modification like cessation of smoking, avoidance of alcohol and spicy food, and going to sleep not less than two hours after food is equally important conservative management. However, as quoted earlier during this discussion, life style modification like cessation of smoking, avoidance of alcohol and spicy food, and going to sleep not less than two hours after food is equally important conservative management.

DISCUSSION
In the present study, hoarseness of voice, vocal fatigue and foreign body sensation were the commonest presenting symptoms. Reinke’s edema was seen in 9% patients. It is often seen in patients who are chronically exposed to irritants such as tobacco smoke. Intraductal edema was seen in 9% patients. It is often seen in patients who are chronically exposed to irritants such as tobacco smoke. Intracordal edema was seen in 9% patients. It is often seen in patients who are chronically exposed to irritants such as tobacco smoke.

**REFERENCES**