

A Study of the various risk factors associated with hoarseness of voice at tertiary teaching health care centre

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Abstract

Background: Hoarseness of voice is a coarse, scratchy sound most often associated with abnormalities of the vibratory margins of the vocal folds, in condition like laryngitis, vocal fold hemorrhage, mucosal disruption, mass lesions and carcinoma. **Aims and Objectives:** To Study the various risk factors associated with hoarseness of voice at tertiary teaching health care centre. **Methodology:** After approval from institutional ethical committee this case control study was carried out in the department of Otorhinolaryngology during the one year period i.e. June 2016 to June 2017. All the patients with voice changes attending the OPD and IPD were assessed those with clear pathological cause of Hoarseness with the written and explained consent were included into the study. So during the one year there were 54 patients of all age and sex were included into the study, similarly the 54 normal individuals without the hoarseness attending for other complains were also selected. The statistical analysis was done by chi-square test analyzed by SPSS 19 version software. **Result:** The majority of the patients were in the age group of 50-60 were 27.78% followed by 40-50 were 20.37%, 30-40 were 16.67%, 20-30 were 12.96%, 10-20 were 7.41%, <10 were 3.70%. The age composition of cases were comparable with the normal individuals ($\chi^2 = 2.599$, $df=7$, $p>0.05$). The male female composition of both the Cases and Normal patients in both the group was comparable ($\chi^2 = 0.37$, $df=1$, $p>0.05$). The significantly associated risk factors were Smoking ($\chi^2=16.61$, $1,p<0.0001$), Smoking + alcohol ($\chi^2=13.54$, $1,p<0.001$), Smoking+ tobacco ($\chi^2=12.78$, $1,p<0.001$), Tobacco ($\chi^2=10.98$, $1,p<0.001$), Vocal abuse ($\chi^2=9.67$, $1,p<0.001$), History of trauma ($\chi^2=7.59$, $1, p<0.001$), but Alcohol ($\chi^2=0.771$, $1,p>0.05$), Age related hoarseness ($\chi^2=0.57$, $1,p>0.05$) was not significantly associated. **Conclusion:** It can be concluded from our study that the most common associated risk factors were Smoking, Smoking + alcohol, Smoking+ tobacco, Tobacco, Vocal abuse, History of trauma but age related hoarseness and alcohol addiction only was not significantly associated.

Key Words: Hoarseness, Voice changes, ARI (Acute respiratory Tract Infections).

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INTRODUCTION

Hoarseness is a coarse, scratchy sound most often associated with abnormalities of the vibratory margins of

the vocal folds, in condition like laryngitis, vocal fold hemorrhage, mucosal disruption, mass lesions and carcinoma¹. Hoarseness lasting longer than 2 weeks must be evaluated completely². Hoarseness of voice is one of the commonest symptoms in Otorhinolaryngology practice and it indicates diseases ranging from totally benign condition to the most malignant condition. Benign lesions are numerically more common causes of hoarseness than malignant diseases³. To listen the spoken voice is the only way to identify hoarseness. It is often the first and only signal of serious local or systemic disease⁴. So we have studied, which are the risk factors associated with in the patients at tertiary health care centre.

MATERIAL AND METHODS

After approval from institutional ethical committee this case control study was carried out in the department of Otorhinolaryngology during the one year period i.e. June 2016 to June 2017. All the patients with voice changes attending the OPD and IPD were assessed those with clear pathological cause of Hoarseness with the written

and explained consent were included into the study. So during the one year there were 54 patients of all age and sex were included into the study, similarly the 54 normal individuals without the hoarseness attending for other complaints were also selected. The statistical analysis was done by chi-square test analyzed by SPSS 19 version software.

RESULTS

Table 1: Distribution of the patients as per the age

Age	No. (n=54)	%	No. (n=54)	%
<10	2	3.70	1	1.85
10-20	4	7.41	2	3.70
20-30	7	12.96	4	7.41
30-40	9	16.67	10	18.52
40-50	11	20.37	13	24.07
50-60	15	27.78	19	35.19
>60	6	11.11	5	9.26
Total	54	100.00	54	100.00

($\chi^2 = 2.599$, df=7, p>0.05)

The majority of the patients were in the age group of 50-60 were 27.78% followed by 40-50 were 20.37%, 30-40 were 16.67%, 20-30 were 12.96 %, 10-20 were 7.41%, <10 were 3.70%. The age composition of cases were comparable with the normal individuals ($\chi^2 = 2.599$, df=7, p>0.05).

Table 2: Distribution of the patients as per the sex

Sex	No. (n=54)	%	No. (n=54)	%
Male	34	62.96	37	68.52
Female	20	37.04	17	31.48
Total	54	100.00	54	100.00

($\chi^2 = 0.37$, df=1, p>0.05)

The male female composition of both the Cases and Normal patients in both the group was comparable ($\chi^2 = 0.37$, df=1, p>0.05)

Table 3: Distribution of the patients as per the risk factors of hoarseness

Risk Factors	Cases No. (n=54)	%	Normal No. (n=54)	%	Chi-square test
Smoking	34	62.96	13	24.07	$\chi^2 = 16.61$, 1,p<0.0001
Smoking + alcohol	29	53.70	11	20.37	$\chi^2 = 13.54$, 1,p<0.001
Smoking+ tobacco	25	46.30	14	25.93	$\chi^2 = 12.78$, 1,p<0.001
Tobacco	23	42.59	12	22.22	$\chi^2 = 10.98$, 1,p<0.001
Vocal abuse	19	35.19	3	5.56	$\chi^2 = 9.67$, 1,p<0.001
History of trauma	9	16.67	1	1.85	$\chi^2 = 7.59$, 1,p<0.001
Alcohol	16	29.63	12	22.22	$\chi^2 = 0.771$, 1,p>0.05
Age related	6	11.11	5	9.26	$\chi^2 = 0.57$, 1,p>0.05

The significantly associated risk factors were Smoking ($\chi^2 = 16.61$, 1,p<0.0001), Smoking + alcohol ($\chi^2 = 13.54$, 1,p<0.001), Smoking+ tobacco ($\chi^2 = 12.78$, 1,p<0.001), Tobacco ($\chi^2 = 10.98$, 1,p<0.001), Vocal abuse ($\chi^2 = 9.67$, 1,p<0.001), History of trauma ($\chi^2 = 7.59$, 1,p<0.001), Alcohol ($\chi^2 = 0.771$, 1,p>0.05), Age related ($\chi^2 = 0.57$, 1,p>0.05).

DISCUSSION

The common causes of Hoarseness are: Infectious And Inflammatory: Acute laryngitis is a common, self-limited condition that typically presents with hoarseness. Short-term vocal abuse and upper respiratory infection (URI) are the most common causes of acute laryngitis. Less common infectious causes of hoarseness include fungal and bacterial infections.⁵ In most cases, other than in acute laryngitis, the hoarseness is only one of many symptoms and is not the presenting symptom. Upper respiratory allergies often involve the larynx, resulting in hoarseness, along with symptoms of rhinitis and sinusitis. Laryngitis is also associated with laryngopharyngeal reflux; however, diagnostic criteria and appropriate medical management for this entity are controversial.⁶⁻⁸ Chronic laryngitis, which is often associated with a variety of vocal cord lesions, may rarely be irreversible. Smoking and chronic voice abuse are the most common causes of chronic laryngitis. Other irritants, such as laryngopharyngeal reflux, allergies, and inhaled corticosteroid use (especially fluticasone [Flovent]),⁹⁻¹¹ Neuromuscular And Psychogenic: Vocal cord paralysis can be unilateral or bilateral. Most cases of unilateral vocal cord paralysis are caused by injury to the recurrent laryngeal nerve, which may occur as a result of thyroid, neck, or cardiothoracic surgery,¹²⁻¹⁴ Associated Systemic And Neoplastic Diseases : Hoarseness may occur with several endocrine disorders, most notably hypothyroidism and acromegaly. Inflammatory arthritis, such as rheumatoid disease, may affect the larynx and result in hoarseness. Sarcoidosis and amyloidosis are also uncommon causes of hoarseness. Laryngeal amyloidosis may be localized, or may be one manifestation of systemic disease.¹⁵ In our study we have found that The majority of the patients were in the age group of 50-60 were 27.78% followed by 40-50 were 20.37%, 30-40 were 16.67%, 20-30 were 12.96 %, 10-20 were 7.41%, <10 were 3.70%. The age composition of cases were comparable with the normal individuals ($\chi^2 = 2.599$, $df=7$, $p>0.05$). The male female composition of both the Cases and Normal patients in both the group was comparable ($\chi^2 = 0.37$, $df=1$, $p>0.05$) The significantly associated risk factors were Smoking ($\chi^2 = 16.61$, $1, p<0.0001$), Smoking + alcohol ($\chi^2 = 13.54$, $1, p<0.001$), Smoking+ tobacco ($\chi^2 = 12.78$, $1, p<0.001$), Tobacco ($\chi^2 = 10.98$, $1, p<0.001$), Vocal abuse ($\chi^2 = 9.67$, $1, p<0.001$), History of trauma ($\chi^2 = 7.59$, $1, p<0.001$), but Alcohol ($\chi^2 = 0.771$, $1, p>0.05$), Age related hoarseness ($\chi^2 = 0.57$, $1, p>0.05$) was not significantly associated. These findings are similar to Kamana Sindhu Pal¹⁶ they found that Upper respiratory

tract infection (24 %) and smoking (33 %) were found to be the common predisposing factors. Functional disorders were found in 14 % of the cases.

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