



TREND OF LPR INCIDENCE IN A TERTIARY CARE HOSPITAL POST COVID 19 PANDEMIC: A RETROSPECTIVE OBSERVATIONAL STUDY.

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ABSTRACT

Aim: To assess laryngopharyngeal reflux(LPR) incidence during COVID-19 pandemic using Reflux Symptom Index(RSI) as diagnostic tool. **Materials And Method:** This was a retrospective study done at PMCH PATNA from January to June 2020. Incidence of LPR cases in our OPD from April to June 2020 (178Cases) were compared to preceding three months (90 cases) using RSI tool. **Results:** The number of LPR cases have doubled per hundred laryngeal cases post pandemic $p<.01$. Young age group shows an increasing trend of LPR cases post pandemic. **Conclusion:** Increase in incidence of laryngopharyngeal reflux during pandemic due to stress owing to health concern in pandemic, job loss ,sedentary life style, overeating ,excess alcohol, caffeine intake and smoking .

KEYWORDS

Laryngopharyngeal reflux(LPR), Reflux symptom index(RSI), Reflux finding score(RFS), SARS CoV2, COVID 19, pandemic, epidemic

AIM:

To assess laryngopharyngeal reflux(LPR) incidence during COVID-19 pandemic using Reflux Symptom Index(RSI) as diagnostic tool.

INTRODUCTION:

SARS Cov-2 is novel virus causing COVID 19, has spread through length and breadth of globe after its outbreak in Wuhan city.

- This is a challenging time for all of us, to contain the spread of this disease.
- In midst of this pandemic we have observed an increase in footsteps of laryngeal cases in OPD of otolaryngology department in our hospital.
- Out of all laryngeal disease we tend to study trend in LPR (laryngopharyngeal reflux) incidence through RSI score[1] during this challenging pandemic period.
- LPR is spillage of gastric contents acid and pepsin in form of mist or droplet in larynx.[3] Laryngeal mucosa are extremely susceptible to damaging effect of gastric content unlike esophageal mucosa.

Materials And Method:

This was a retrospective study done at PMCH PATNA from January to June 2020.

- Inclusion Criteria:** PPIs were used to treat the disease and only responders were included in the study.
- Exclusion Criteria:** All other laryngeal pathologies were excluded prior to scoring.
- Sample were divided into different age groups and average RSI were calculated in each group.
- RSI is a questionnaire consisting of nine specific question pertaining to LPR which are graded from 0 to 5. A score of greater than 10, 20, 30 corresponds to mild ,moderate and severe LPR respectively. This is fairly sensitive index whose specificity also increases as the score increases.
- Incidence of LPR cases in our OPD from April to June 2020 (178Cases) were compared to preceding three months (90 cases).
- Mean, median & mode RSI of total sample were calculated .

Data Is Tabulated And Result Interpreted.

RFS [reflux finding score] an endoscopic scoring system was calculated in all cases in prepandemic period but unfortunately could not be followed up in all cases during pandemic .

RESULTS:

Mean RSI of our sample from April to June 2020 was 28 $p<.01$. The value >10 is diagnostic of LPR . Most common complaint was cough (40%) followed by globus (21%)dysphonia (19%)and throat clearing(15%).

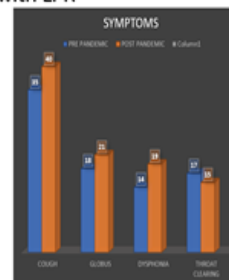
The number of LPR cases have doubled per hundred laryngeal cases post pandemic. Young age group shows an increasing trend of LPR cases post pandemic.

Reflux symptom index

S no.	Symptom questionnaire	mean	median	mode	P value
1	Hoarseness or problem with your voice	4	4	4	.03
2	Clearing your throat	4	4	5	.04
3	Excess throat mucus or post nasal drip	2	2	3	.01
4	Difficulty swallowing food , liquids or pills	2	3	2	.08
5	Coughing after you ate or after lying down	3	4	3	.03
6	Breathing difficulties or choking episodes	2	2	2	.06
7	Troublesome or annoying cough	4	3	4	.07
8	Sensation of something sticking or lump in throat	4	4	4	.02
9	Heartburn,	3	3	2	.01
	Mean average RSI	28	4	3,4	

Complaints of patients with LPR

S no.	symptom	Endoscopic sign	percentage
1.	Cough	Erythema ,	40%
2.	Globus	Granuloma, endolaryngeal mucus	21%
3.	Dysphonia	Vocal fold edema,	19%
4.	Throat clearing	Thick endolaryngeal mucus	15%
5.	Post nasal drip	Thick endolaryngeal mucus	3%
6.	Dysphagia	Arytenoid granulation	2%

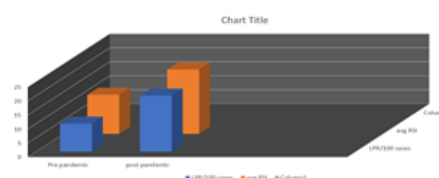


Average RSI and RFS in different age groups

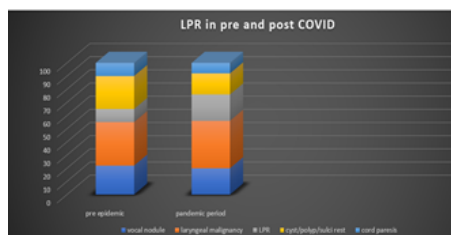
Age group	Pre pandemic RSI	Post pandemic RSI	P	RSI
0-10	10.00	10.00	1	> .05
11-20	10.00	10.00	1	> .05
21-30	10.00	10.00	1	> .05
31-40	10.00	10.00	1	> .05
41-50	10.00	10.00	1	> .05



LPR / 100 OPD Laryngeal cases in OPD



Laryngeal cases in OPD at our hospital



DISCUSSION:

Koufmann, Belafsky et al. in their studies have considered RSI and RFS as fairly sensitive index[1][2].

- Increase in incidence of laryngopharyngeal reflux during pandemic due to stress owing to health concern in pandemic, job loss, sedentary life style, overeating, excess alcohol, caffeine intake and smoking.[4]
- The most susceptible group were middle aged and elderly but in this pandemic included younger age group too.
- Reflux symptom index has fairly high sensitivity but low specificity[1]. Specificity increases as the RSI score increases.
- Most common symptom were cough, hoarseness and globus.
- Most specific sign were posterior commissure hypertrophy and hyperaemia in posterior glottis.[2]
- We have not taken RFS[5] index in our study due to inability to perform and record scoring in every LPR cases owing to logistic for endoscopy in COVID pandemic situation. Further studies for longer period and endoscopic examination in each and every case is needed to further substantiate the trend of LPR in this pandemic.

CONCLUSION:

There is two fold rise in incidence of LPR during current COVID pandemic $p < .01$.

- There is increase incidence in younger age group in contrast to pre epidemic era $p < .01$.
- Symptoms of LPR scare patient and sometimes doctor, being confused with an early manifestation of corona.
- Reflux symptom score is fairly good tool for LPR and can be used as screening tool (if score is high) for COVID testing prior to endoscopic examination of larynx.

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