

Original Research Article

DOI: <https://dx.doi.org/10.18203/issn.2454-5929.ijohns20205626>

Co-morbidities associated with various ear nose throat conditions of geriatric patients in a tertiary care hospital

Anoop Varghese Kuruvilla, Ariyampambil Rajagopalan Vinayakumar*, Nevil Varghese

Department of Otorhinolaryngology, Amala Institute of Medical Sciences, Amala Nagar, Thrissur, Kerala, India

Received: 28 October 2020

Accepted: 04 December 2020

***Correspondence:**

Dr. Ariyampambil Rajagopalan Vinayakumar,
E-mail: vinjeej@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Old age is a sensitive phase in which lack of awareness regarding the changing behavioural patterns leads to major physiological and psychological problems. This emphasizes the need for a study on the co-morbidities associated with ENT conditions among geriatric population presented in a tertiary care hospital.

Methods: A discrete study was done among the elder patients (≥ 65 years) admitted in ENT department. Detailed history was taken regarding their co-morbidities and health problems using questionnaire. Feedback of these patients with respect to their ENT conditions as well as co-morbidities was recorded during hospital stay and subsequent follow-up in ENT outpatient department. Opinion of general physician, neurologist, cardiologist was sought and advices followed for management of co-morbidities. The prevalence of co-morbidities and health problems were subjected to statistical analysis.

Results: A total of 141 patients (90 male and 51 female) were included in the study. The most common ENT associated illness for the admission was epistaxis (23/141, 16.3%) and vocal cord pathology (23/141, 16.3%). The most common associated co-morbidities were hypertension (54/141, 38.2%) and type 2 diabetes (51/141, 36.17%). Symptomatic improvement and patient satisfaction with treatment offered were higher with adequate management of co-morbidity.

Conclusions: The most common ENT associated illness for the admission was epistaxis and vocal cord pathology which was associated with hypertension and type 2 diabetes. Better control of these co-morbidities improves treatment outcome as well as patient satisfaction, trust with medical field.

Keywords: Elderly, Morbidity, Hypertension, Diabetes, Epistaxis, Vocal cord pathology

INTRODUCTION

Term geriatrics was coined by Elie Metchnikoff in 1909.¹ Age 65-69 years is considered as young, 70-79 years as elderly and 80 and above is called super elderly. Old age is a sensitive phase. With the ever improving technical and medical care facilities, there has been a drastic demographic shift in the number of geriatric populations. The healthcare workforce has to be prepared to meet the needs of older patients. Co-morbidities pose a challenge and affect the quality of life. Elderly population is affected with neurodegenerative changes, arrhythmias, orthostatic hypotension- cerebral hypo perfusion and

presyncope dizziness.² Embolic events/arterial dissection reduced visual acuity, depth perception, accommodation and contrast sensitivity.² Disorders affecting somatosensory system include arthritis, peripheral neuropathy from diabetes/vitamin deficiency, joint replacements.³ Anxiety and depression invariably forms part of silent stressor of the elderly.⁴ It is important to understand and record the commonly seen ailments in the geriatric population; to understand their emotional and mental well-being; and how effective, proper communication and patient decision aids is crucial for reaching treatment decisions and providing value-concordant care. Greater personal attention and care in

matters of physical, mental and social well-being is considered necessary for this rapidly growing section of population. This study was aimed to evaluate this privileged section of community, understand the common ailments associated with their condition and shed light on the certain issues to be understood while treating the elderly.

METHODS

Study design and sampling

A discrete study was designed among elder patients (≥ 65 years) admitted in ENT department from 1st June 2018-31st May 2019 due to various ENT conditions were included in the study. All the elder patients admitted in ENT department during the period of the study were included. Informed consent was taken before conducting the study. Patients who were not willing to participate in the study and those with severe dementia were excluded from the study. The study was conducted according to the Helsinki declaration, 1975 as revised in 2000 procedure and was approved by institutional ethics committee.

Study procedure:

Detailed history was taken regarding their co-morbidities and health problems using questionnaire. Opinion of general physician, neurologist, cardiologist was sought and advices followed for management of co-morbidities. During follow up in ear nose throat out-patient department, symptomatic patients were assessed with the appropriate procedures such as endoscopy, Dix-Hallpike manoeuvre.

RESULTS

A total of 141 patients (90 male and 51 female) were included in the study (Table 1). The most common ENT associated illnesses for the admission were epistaxis (23/141, 16.3%) and vocal cord pathology (23/141, 16.3%) (Figure 1). Nasal bleeding was caused by different factors like upper respiratory infection, trauma or neoplasms of nose and paranasal sinuses. Often more than one factor may be responsible for the epistaxis. Hypertension alone rarely leads to epistaxis. Vocal cord pathologies ranging from benign lesions like vocal nodule, vocal cord polyp was getting admitted for surgery or vocal cord malignancies necessitating hospitalization for biopsy or tracheostomy. The co-morbidities like hypertension or diabetes necessitated reference to medicine department for attaining normal parameters which was essential for general anaesthesia fitness in various surgical procedures, thereby prolonging their hospital stay. The most common associated co-morbidities were hypertension (54/141, 38.2%) and type 2 diabetes (51/141, 36.17%) (Figure 2). Hypertension was associated with 69.5% cases of epistaxis (16/23) and 75 % cases of benign paroxysmal positional vertigo (BPPV) (17/23). Diabetes was the predominant co-

morbidity in 100% otitis externa cases (5/5) and 75% of dysphagia (3/4) cases. Among the vocal cord pathology, vocal polyp (11/ 23, 47.86 %) was the most common. Eight percent of these patients were either hypertensive or diabetic (Table 2). Geriatric patients who were on regular medications were 106/141 (75%). Fifteen cases (10.63%) were without any co-morbidities (Table 3). Only 4 cases (2.83%) were newly diagnosed for the co-morbidity. Follow-up analysis showed no further episodes of epistaxis in 20/23 patients (86.9%) in whom adequate blood pressure control was obtained and occasional epistaxis found in the remaining 13.1% (Table 4). Patients with vocal cord pathologies were with adequate glycaemic and blood pressure control (17/23). 73.9% showed symptomatic improvement and better compliance to speech therapy when compared to those with deranged glycaemic or blood pressure values (26.1%) (Table 4). No further events of otitis externa and perichondritis were seen in patients who had adequate glycaemic control. Symptomatic improvement and patient satisfaction with treatment offered were higher with adequate management of co-morbidity as shown in the Table 4.

Table 1: Gender category of geriatric patients in the study.

Gender	No patients (%)
Male	90 (63.83)
Female	51 (36.17)

Table 2: Categorization of patients admitted in ENT wards.

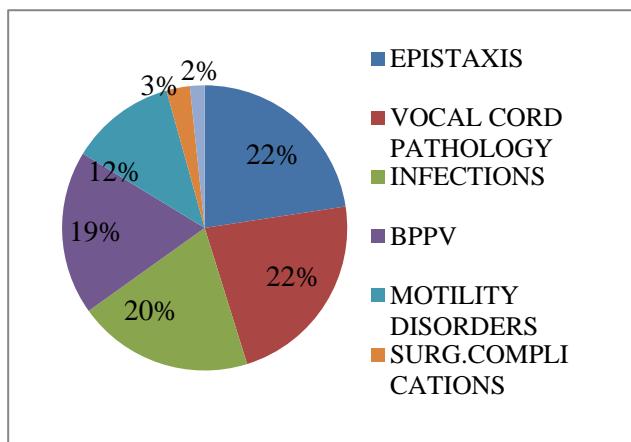
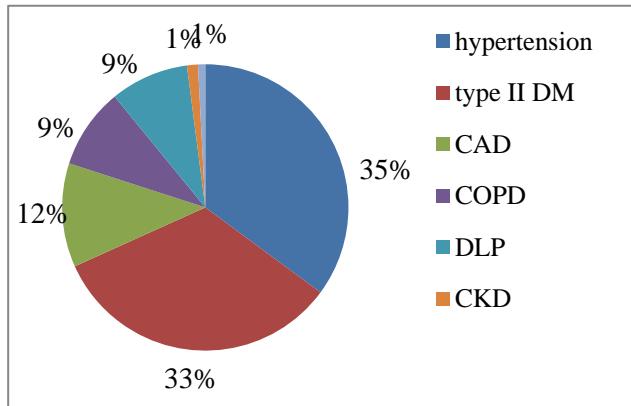
Patients with co-morbidities: pre-existing (%)	Patient with co-morbidities: newly diagnosed (%)	Patients without co-morbidities (%)
122 (86.54)	4 (2.83)	15 (10.63)

Table 3: Association of hypertension and diabetes in elderly with various ENT conditions admitted in ENT wards.

ENT condition	Predominant co-morbidity identified (%)
Epistaxis	Hypertension (69.56)
Otitis externa	Diabetes (100)
Dysphagia	Diabetes (75)
Benign paroxysmal positional vertigo	Hypertension (75)
Perichondritis	Diabetes (66.6)
Vocal cord pathology	COPD (26.1), hypertension and diabetes (8 each)
Chronic otitis media	Hypertension (33)
Chronic rhinosinusitis	Hypertension (30)

Table 4: Follow-up analysis in ENT OPD for various ENT conditions.

ENT condition	With adequate control of co-morbidity		Without adequate control of co-morbidity	
	Symptomatic (%)	Asymptomatic (%)	Symptomatic (%)	Asymptomatic (%)
Epistaxis	0	86.9 (20/23)	8.7 (2/23)	4.3 (1/23)
Vocal cord pathology	0	73.9 (17/23)	26.1 (6/23)	0
Benign paroxysmal positional vertigo	8.7 (2/23)	60.9 (14/23)	21.7 (5/23)	8.7 (2/23)
Otitis externa	0	100 (5/5)	0	0
Perichondritis	0	100 (3/3)	0	0
Dysphagia	0	50 (2/4)	25 (1/4)	25 (1/4)
Chronic otitis media	22.2 (2/9)	33.3 (3/9)	33.3 (3/9)	11.1 (1/9)
Chronic rhinosinusitis	10 (1/10)	60 (6/10)	30 (3/10)	0

**Figure 1: ENT related health problems in geriatric population.****Figure 2: Co-morbidities in geriatric population admitted in ENT wards.**

DISCUSSION

Results of this study revealed that epistaxis is common ENT associated morbidity found in elder subjects while hypertension is the co-morbidity associated. Management of comorbidities is very essential for better understanding

of its impact on daily activities and ENT conditions in the elderly. The results of this study are consistent with that of Kung et al.⁷ Kung et al in a systematic review among 2768 patients in Seoul, South Korea found that the risk of epistaxis was increased in patients with hypertension (Odd's ratio:1.532). In another analytical study among 71 patients, Sreenivas et al demonstrated that an increased risk of recurrence of BPPV symptoms if associated with co-morbidities such as hypertension (45%) and diabetes (62%).⁸ Most of these patients were presented with recurrence of symptoms. In this study, we found 75% of patients presented with epistaxis had benign paroxysmal positional vertigo.

Type 2 diabetes was the co-morbidity among 51/141 patients in this study. Silva et al analysed the otolith function using vestibular evoked myogenic potential and found that diabetes mellitus affects the otolith function.⁹ Webster et al in their prospective study found that patient with hyperglycaemia has a relative risk of 2.47 times higher for BPPV recurrence.¹⁰ A meta-analysis done by Lee et al concluded that laryngeal dysfunction can mimic asthma in 25% cases in elderly and is often mistreated.¹¹ A screening study on oropharyngeal dysphagia and diabetes mellitus in Cairo, Egypt by Zakaria et al found that age progression and female sex were the risk factors for dysphagia.¹² In most of the cases, dysphagia aggravates with uncontrolled diabetes which can contribute to autonomic/peripheral neuropathy. All these studies point towards the significance of careful treatment of comorbidities in elderly for better assessment of treatment outcomes.

History of postural hypotension, medication review, feet and footwear examination and vision assessment have to be done.⁴ Best case/worst case' communication tool which focuses on documentation by the health care proxy/surrogate, patient preferences/expectations, social support, social work referral are to be made. This helps to identify the patients at risk for situations like delirium, risk of falls and prolonged bed riddance. The provider describes to the patient how they might experience a range of possible outcomes in the best case, worst case and most likely scenarios. Clear information should be conveyed to the patient and their bystanders about:

medication details, treatment plan, nutrition and diet education, psychiatric counselling, exercise. Avoid unnecessary routine testing for older adults with the exception of haemoglobin, blood sugar, serum creatinine and serum albumin due to lack of evidence supporting their benefit.¹

Limitations

This single centre study was done in small number of patients in a short period. Therefore, a multicentre study on a large number of patients is warranted.

CONCLUSION

The most common ENT associated illness for the admission was epistaxis and vocal cord pathology which was associated with hypertension and type 2 diabetes. Better control of these co-morbidities improves treatment outcome as well as patient satisfaction, trust with medical field.

ACKNOWLEDGEMENTS

Author would like to thank to Dr. Ajith T.A professor, department of biochemistry, Amala institute of medical sciences, Thrissur, Kerala, India for valuable help during the preparation of this manuscript.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Mirza N, Lee JY, Chandrasekhar SS. Treating elderly with science and dignity. *Geriatric Otolaryngol* preface. 2018;51(4):15.
2. Orinei H, Ito H, Suzuki T. Reviewing definition of elderly. *Geriatric Gerontol Int*. 2006;6(3):149-58.
3. Little W, Jenkins C, Wallace LM. Ageing and Elderly. *Introduction Sociol Canada* Ed. 2015;716-20.
4. Park K, Wesley AJ, Nanacy T. Preventive medicine in obstetrics. *Paediatrics geriatrics*. 2019;650-52.
5. Witham MD, Penman ID, Straham MWJ, Hobson RP. Ageing and disease, 23rd Ed. 2018;1305-9.
6. Rao S, Saxena D, Yasobant S. Operational Guidelines, National Programme for Health Care of Elderly. 2011;7-9.
7. Min HJ, Geun KH, Kim KS. Association between hypertension and epistaxis, systematic review and meta-analysis. *Otolaryngol Head Neck Surg*. 2017;157(6):921-7.
8. Sreenivas V, Sima NH, Philip S. Role of comorbidities in BPPV. *Ear Nose Throat J*. 2019;1-6.
9. D'Silva L, Staecker H, Lin J, Maddux C. Otolith Dysfunction in persons with both Diabetes and Benign Paroxysmal Positional Vertigo. *Otol Neurotol*. 2018;38(5):379-85.
10. Webster G, Maria P, Rijo JD, Marcio C, Salmito C. Hyperinsulinemia and hyperglycaemia: risk factors for recurrence of benign paroxysmal positional vertigo, Guilherme. *Associacao Brasileira de Otorrinolaringologia*. 2015;81:347-51.
11. Lee JH, An J, Kyeong H, Moon HB. Prevalence and impact of comorbid laryngeal dysfunction in asthma. *J Allergy Clin Immunol*. 2020;1165-73.
12. Zakaria DA, Bekhet MM, Kodheir MS, Bassiouny SS. Oropharyngeal Dysphagia and Diabetes Mellitus, *Folia Phoniatr Logop*. 2018;70(3-4):134-7.

Cite this article as: Kuruvilla AV, Vinayakumar AR, Varghese N. Co-morbidities associated with various ENT conditions of geriatric patients in a tertiary care hospital. *Int J Otorhinolaryngol Head Neck Surg* 2021;7:91-4.