Prevalence

Prevalence of oropharyngeal dysphagia (OD) among the elderly is extremely high. We recently studied the real prevalence of OD among independently living older persons, and found a prevalence of 23.0% (16.6% in 70–79 years group and 33.0% in the ≥80 years group). Prevalence of OD among elderly hospitalized patients is much higher, and age more than 75 years doubles the risk of dysphagia and has a significant impact on morbidity and hospital length of stay. We also found dysphagia affected up to 44% of patients admitted to the acute geriatric unit of our hospital and had a significant impact on prognosis and mortality of patients. Dysphagia also affects more than 50% of older people living in nursing homes, and up to 29% of them were tube fed mainly due to severe aspirations. OD is a prevalent and serious condition among the main phenotypes of older patients [1].

Pathophysiology

Videofluoroscopy (VFS) is the gold standard for the study of the mechanisms of dysphagia in the elderly. At our institution, VFS is performed on every older patient with a positive screening for OD using the VVST[2]. VFS can assess several signs related to the transport function of swallowing, the efficacy of deglutition, which is the patient's ability to ingest all the calories and water he or she needs to remain adequately nourished and hydrated, and (b) safety, which is the patient's ability to ingest all needed calories and water with no respiratory complications [1]. OD in the elderly is mainly characterized by high prevalence of penetrations and aspirations during swallow response, and oropharyngeal
residue. Pathophysiology of impaired safety and aspirations is mainly associated with delayed LVC and delayed maximal anterior and vertical hyoid movement, and impaired efficacy is associated with weak tongue squeeze and weak bolus propulsion forces [3].

**Natural History, Prognosis and Complications**

The impact of OD on the health of older patients is higher than that of other chronic conditions such as metabolic and cardiovascular diseases and even that of some types of cancer. OD may give rise to two groups of clinically relevant complications in older people: (a) malnutrition and/or dehydration caused by a decrease in the efficacy of deglutition, and (b) choking and tracheobronchial aspiration caused by the decrease in deglutition safety and which results in respiratory infections and AP with high mortality rates [1,4]. Despite this, OD is underestimated and under-diagnosed as a cause of symptoms and major nutritional and respiratory complication in older patients. Figure 1 summarizes the pathophysiology of complications related to dysphagia in the elderly [3]. We therefore recommend a policy of universal screening for and assessment of OD as part of the standard geriatric evaluation of these patients. We also believe OD fulfills most criteria to be recognized as a major geriatric syndrome [1].

**Treatment**

Identification of videofluoroscopic signs allows the classification of patients with dysphagia into several therapeutic categories ranging from: (a) patients with safe and efficient swallowing that can achieve free oral intake; (b) patients with mild symptoms that need strategies based on the reduction of volume and increase in bolus consistency; (c) patients with severe symptoms that also need changes in head posture, heightened sensory input, and swallow maneuvers, and (d) those patients with such severe aspirations or such inefficient swallowing that they need percutaneous endoscopic gastrostomy in order to avoid respiratory complications or malnutrition [1]. We try to maintain a minimal safe oral intake in these latter patients with an aim to eventual rehabilitation. In all these phenotypes of older patients, we found scientific evidence of a strong therapeutic effect on efficacy and safety of oral and pharyngeal phases of swallowing by enhancing bolus viscosity to nectar and a maximal therapeutic effect on safety at pudding viscosity [2,3,5]. Thickeners minimized the prevalence of VFS signs of impaired safety in frail elderly patients and reduced aspirations from 17% during liquid series to 9% at nectar viscosity and 6% with pudding [3]. We believe that OD in the elderly can be treated, and treatment is cost-effective, and that the use of dysphagia
programs is correlated with reduction in the impact of its complications, improvement in nutritional status, reduction in AP rates and mortality, and overall improvement in quality of life.

References