Commentary: Risk factors predicting visual morbidity in thyroid eye disease

Gupta et al. in their original article titled “Visual Morbidity in Thyroid Eye Disease in Asian Indian Patients” have done a commendable job of reporting a fairly large cohort of 301 patients with thyroid eye disease (TED) in India. There is a dearth of information on TED phenotypes in the Indian population and their outcomes after management. Risk factors predictive of severe disease phenotypes in TED will help prognostication and keep them under closer observation before quiescence sets in.

Diabetes Mellitus (DM) and thyroid dysfunction are the two most common endocrinology disorders. In a recent nationwide survey in India representing 51% of population, an overall DM prevalence of 7.3% in adults >20 years of age was reported. An additional 11% of the population were pre-diabetic defined as an impaired glucose tolerance or impaired fasting glucose tolerance. Gupta et al. report 18% of TED patients were diabetic in their cohort. While on a cursory look this may appear to be high, one needs to keep in mind that prevalence of DM in community cannot be directly compared to that in a subset of patients coming to a hospital. Grave’s disease and type 1 DM tend to coexist owing to their autoimmune origin. In a recent cross-sectional survey reported by Ramamurthy et al. from the southern part of India, 31% of TED patients had concurrent DM. In the same study the prevalence of DM in severe TED was found to be 77%. Management of these patients poses unique challenges owing to fluctuating glycemic levels, risk of sight threatening TED and even loss of vision in some patients.

Gupta et al. found 19% visual morbidity in the cohort of 301 TED patients of which dysthyroid optic neuropathy (DON) constituted 14.3%, corneal breakdown 10%, and diplopia 8.6% of all TED patients. DON is rare and typically seen in 5–8.6% of TED patients. The relatively higher prevalence of DON in the series reported by Gupta et al. may be because one-fifth of their patients had concurrent DM. DM is known to cause microvasculopathy which may be responsible for the higher prevalence of DON in TED.

Convincing evidence exists in the literature showing the causal role of smoking in the development and severity of TED. In a recent meta-analysis smoking had a strong association in the development of TED (OR 1.9–20.2). An increased risk of TED (RR 1.32), proptosis (RR 2.64) and diplopia (RR 3.14) in smokers versus never-smokers was reported in a cohort study. In addition, smoking has been found to have dose-effect relationship in TED. It is interesting to note that Gupta et al. did not find smoking to be a risk factor for visual morbidity in TED. Current smokers constituted 12.3% of the cohort. It is not clear how many of their patients presented with visual morbidity compared to those who...
developed the same over the course of their follow-up.[11] While the authors argue that cessation of smoking may have influenced the course of the disease, this is unlikely to have helped patients presenting with visual morbidity.

In summary, the study reported a large cohort of 301 Asian Indian patients and found male gender, older age and DM were risk factors for visual morbidity in TED. As the global prevalence of DM increases and hopefully that of smoking decreases over time, optimal treatment strategies for TED with concurrent DM need to be devised. This is the need of the hour and prospective multi-center studies will be a step in that direction.

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Conflicts of interest
There are no conflicts of interest.

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