

## **ABSTRACT**

**Introduction:** Achalasia is a primary motility disorder of the esophagus due to degeneration neurons in myenteric plexus. Although the exact pathogenesis is unknown, autoimmune and neurodegenerative processes seem to be involved. We thus hypothesized that the prevalence of neurodegenerative and/or neuroinflammatory disorders (NDD) with autoimmune component could be higher among patients with achalasia and vice versa as the background pathogenetic mechanisms might be similar.

**Methods:** This was a prospective, observational, comparative questionnaire-based study. Patients with achalasia from a gastroenterology center and patients with NDD from neurology centers in the Czech Republic were enrolled. Patients from achalasia group were then examined by neurologist and neurological patients by gastroenterologist, including further testing to confirm or rule out either NDD and achalasia, respectively. We assessed the prevalence of both achalasia and NDD and compared them with prevalences in general population.

**Results:** A total of 150 patients with achalasia and 112 patients with NDD were enrolled. We observed an increased prevalence of NDD among patients with achalasia (6.0 % (9/150) as compared to the estimated 2.0 % prevalence of NDD in general population,  $p=0.003$ ). In the NDD group, 32 out of 112 patients (28.6 %) reported dysphagia but we did not observe significantly increased prevalence of achalasia in NDD patients (1.8 % (2/112) vs. 0.8 % in general population,  $p=0.226$ ).

**Conclusion:** The prevalence of NDD was significantly higher among patients with achalasia (6.0 %) compared to general population (2.0 %), suggesting association of these diseases. Nevertheless, large-volume studies are necessary to confirm this finding.