Abstract

Introduction:

Attention deficit hyperactivity disorder (ADHD) and primary enuresis (PE) are both prevalent conditions in school age children. Past research has identified a high co-occurrence rate of these two disorders. However, none of these studies have involved the Chinese population. Moreover, because of the semantic inconsistency of various enuretic terminologies, the relationship of ADHD with different subtypes of enuresis is unclear.

To aid future research investigations, the International Children's Continence Society (ICCS) has clearly defined enuresis into monosymptomatic enuresis (ME) and non-monosymptomatic enuresis (NME). However, the association of ME or NME with ADHD has been under-investigated.

Objectives:

To investigate the relationship between PE and ADHD in Chinese children and to further explore their associations when enuretic subtypes are defined, namely ME and NME.

Methods:

This cross-sectional study was conducted between August 2014 and April 2015. A total of 51 children with PE and 90 control subjects aged 6 to 12 years old were consecutively recruited from a single pediatric renal clinic in Hong Kong. The diagnosis of PE was established by a pediatrician and further sub-classified into ME and NME according to the ICCS 2006 criteria. All subjects were screened by the parent-rated Strengths and Weaknesses of ADHD-Symptoms and Normal-behaviors (SWAN) questionnaire and were

confirmed to have a diagnosis of ADHD by Diagnostic Interview Schedule for Children Version IV (DISC-IV). The association of ADHD with PE and its subtypes were analyzed, adjusting for age, gender and socio-economic status.

Results:

Among children with PE, 20 and 31 of them were subtyped as ME and NME, respectively. The adjusted odds ratio (OR) for children with PE to suffer from ADHD was 5.91 (95% confidence interval [CI] 1.89 – 18.43; P = 0.002), compared to control. When only children with NME were considered, the adjusted odds ratio (OR) for ADHD to occur was 8.72 (95% CI 2.46 – 30.89; P = 0.001). The frequency of ADHD in children with ME was not significantly different from control.

Conclusion:

ADHD is highly associated with PE, especially NME in Chinese children. Their close linkage underscores the clinical importance of differentiating enuretic subtypes according to the ICCS criteria, allowing for the early identification of ADHD in children with NME.