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The Efficacy of Methylphenidate vs Atomoxetine in Treating Attention Deficit/Hyperactivity Disorder in Child and Adolescent

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Abstract : Background: ADHD is the most common behavioural disorder in Indonesia. A stimulant, specifically methylphenidate, has been the first drug of choice for an ADHD treatment more than half a century. During the last decade, non-stimulant therapy (atomoxetine) for ADHD treatment has been developing. Growing evidence of its efficacy and the difference in its side effects profile to stimulant therapy have made methylphenidate's position as a first line therapy for ADHD in need of re-evaluation. Both methylphenidate and atomoxetine have proven themselves against placebos in reducing core symptoms of ADHD. More recent studies directly compare the efficacy of methylphenidate and atomoxetine. Objective: The objective of this paper is to find out if either methylphenidate or atomoxetine is superior to another. This paper will assess the validity, importance, and applicability of current available evidence which compare the effectivity, efficacy, and safety of methylphenidate to atomoxetine for treatment in children and adolescents with ADHD. Method: The articles were searched for through the PubMed and Cochrane databases with "attention deficit/hyperactivity disorder OR adhd", "methylphenidate", and "atomoxetine" as the search keywords. Two articles which were relevant and eligible were chosen by using inclusion and exclusion criterias to be critically appraised. Result: The study by Hazel et al. showed that the efficacy of methylphenidate and atomoxetine are comparable for treatment in child and adolescent ADHD. The result shows 53.6% (95% CI 48.5%-58.4%) of the patient responded to the treatment by atomoxetine and 54.4% (95% CI 47.6%-61.1%) patients responded to methylphenidate, with the difference in proportion of–0.9% (95% CI –9.2%-7.5%). The other study by Hanwella et al. also showed that the efficacy of atomoxetine was not inferior to metilphenidate (SMD = 0.09, 95% CI –0.08-0.26) (Z = 1.06, p = 0.29). However, the sub-group analysis showed that OROS methylphenidate is more effective compared to atomoxetine (SMD = 0.32, 95% CI 0.12-0.53) (Z = 3.05, p < 0.02). Conclusion: The efficacy of methylphenidate and atomoxetine in reducing symptoms of ADHD is comparable. None is proven inferior to another. The choice of pharmacological tratment children and adolescents with ADHD should be made based on contraindication and the side effects profile of each drug.

Keywords : attention deficit/hyperactivity disorder, ADHD, atomoxetine, methylphenidate
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