Neurophysiology gathering: Efficacy and safety of Buspirone in patients with Autism Spectrum Disorder: A systematic review and meta-analysis

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Abstract

Introduction: Autism Spectrum Disorder is considered one of the most serious developmental disorders that affecting social interactions and communication. However, around 1 out of 160 children are diagnosed with Autism. Hypothesis suggest variety of genes play a role in the etiologic of this disorder. Previous trials tried to use Buspirone as a partial serotonin 5-HT(1A) receptors agonist and dopamine D2 auto receptors antagonist in management motor disorder that???s association with Autism. Our aim from this systematic review and meta-analysis is to assess the Safety and Efficacy of Buspirone compared to Risperidone or Placebo in management ASD. To systematically review and conduct a meta-analysis of randomized controlled trials investigating the impact of Losartan as Angiotensin receptor blocker on Hypertrophic Cardiomyopathy Methods: We searched on PubMed, MEDLINE in Process, Scopus and Web of Science (previously ISI) for relevant studies, published up to December 2017. We included randomized controlled trials (RCTs) that comparing buspirone 2.5 mg or 5 mg with Risperidone or Placebo. Data were pooled as risk ratios (RR) or mean differences (MD) with their 95% confidence intervals (CI) between compared groups in a fixed meta-analysis model. Results: From a total of 122 entries identified, 4 RCTs were appropriate for inclusion into the final analysis. Regarding efficacy outcomes, 2.5mg Buspirone shows statistically significant over placebo in terms of Irritability Scale (MD = -0.17, 95% CI [-0.22, -0.12]) and on Inappropriate speech Scale (MD= -0.40, 95% CI [-0.66, 0.14]) while no significant difference was detected between 2.5mg Buspirone and Placebo.

However, 5mg Buspirone showed a statistically significant over placebo in terms of Inappropriate speech Scale (MD= -0.30 95% CI [-0.55, -0.05]). On the other hand, The pooled effect size favored placebo over Buspirone in terms of Irritability Scale (MD= 0.14, 95% CI [0.09, 0.20]), and Social withdrawal (MD= 2.00 ,2.00, 95% CI 1.40, 2.60]). No significant difference was detected between Buspirone and Risperidone in term of Irritability (MD= 1.85, 95% CI [-3.12, 6.82]). However, overall evidence was insufficient to suggest a statistically significant difference in the adverse event profile while adequate reporting of adverse events data in future randomized trials of Buspirone is crucial to conclusively judge its safety. Conclusion: Our findings showed that Buspirone is more Effective in patients with Autism compared to Risperidone or Placebo. No significant difference was observed for adverse events among ASD patients. Further trials are required to clarify the Safety of Buspirone for the treatment of Autism.

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