

Termination of seizures in pediatric age group, best benzodiazepine and route of administration: A network meta-analysis

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This network meta-analysis aims to compare various benzodiazepines and their route of administration using the data published exclusively in Randomized Controlled Trials (RCTs). Two thousand two hundred sixty-three children presenting with an episode of seizure to ER or to a paramedic where they were administered a benzodiazepine as the first-line treatment was included. All the outcomes were measured for their mean with 95% CI and rank probability. The primary outcome was the number of successful seizure cessation [Figure 1]. Secondary outcomes were the time interval between drug administration and seizure cessation, the time interval between patient arrival and seizure cessation and the number of episodes of seizures recurrence after drug administration. For the number of successful cessations, intramuscular midazolam showed the highest mean and the best rank probability of 0.881 (0.65) and 57.9%, respectively. For the time of cessation, both Intravenous Lorazepam (IVL) and intravenous diazepam showed a mean of 3.30 (1.30) with IVL having the highest rank probability of 32%. For total time of cessation, intranasal midazolam showed the best mean and rank probability with a value of 4.3 (1.1) and 55%, respectively. Buccal midazolam showed the lowest mean with a value of 0.106 (0.084) for the rate of recurrence. Although there was no significant difference between the treatments, but based on the rank probability, IVL shows more promising results for patients who already have an established intravenous line, the first line of treatment should be INM as it shows the highest rank probability in total time with second highest successful cessation rate.



Figure 1: Successful seizure cessation

Biography

Syed Umar Hasan (MBBS) graduated from DOW University of Health and Sciences. Trained as a house officer in one of the busiest tertiary care hospitals of Karachi, Dr. Ruth K. M. Pfau Hospital. Currently working in the Aga Khan University as a Cochran certified researcher. Main interest lies in conducting systematic reviews, meta and network meta-analysis.

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