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Optimizing treatment outcomes: A comprehensive cost-effectiveness analysis of antiepileptic agents used in Generalised Tonic-Clonic Seizure

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ABSTRACT

Epilepsy, a global neurological disorder affecting 1% of the population, results in recurrent seizures, significantly impacting quality of life. This study assesses the cost-effectiveness of antiepileptic drugs (AEDs) for Generalised Tonic-Clonic Seizure (GTCS) to enhance seizure control and overall patient outcomes. Conducted over six months from April to September 2023 in the General Medicine Department, the study included 117 patients aged 10-80 years diagnosed with GTCS. Exclusion criteria encompassed children under 10, pregnant or lactating women, patients on multiple AEDs, those with AED resistance, and those unwilling to participate. Data collection encompassed demographic, clinical, diagnostic, and prescription details, alongside cost and clinical outcomes. Statistical analysis was focused on calculating Incremental Cost-Effectiveness Ratios (ICER). The results indicated that Tablet Sodium Valproate, the most frequently prescribed drug, was administered at doses below WHO's ATC-defined daily doses and emerged as the most cost-effective treatment for GTCS. In conclusion, this study identifies cost-effective antiepileptic drug choices for generalised tonic-clonic seizures, providing valuable insights for patients, doctors and policy makers to make judicious, economically sound treatment decisions, thereby improving epilepsy management.

Keywords: cost-effectiveness, incremental cost effectiveness ratio, seizure, sodium valproate, tonic clonic seizure.

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