

**The quantification of anti-epileptic drugs with medication score and its use in assessing ketogenic therapy**

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Ketogenic Therapy (KT), a diet high in fat, low in carbohydrate, and adequate in protein, is used to treat intractable epilepsy in the pediatric population. The two main goals of the KT are to reduce seizures and the use of anti-epileptic drugs (AEDs). The problem associated with assessing the reduction of AEDs is there has not been an effective way to quantify AEDs. Historically, the number (no.) of AEDs has been used, yet this may not give complete information as it does not take other factors into consideration, such as dosage and patient weight. We have introduced an AED Medication Score (MS), which is the ratio of the prescribed dosage to the patient specific minimum recommended dosage. Each MS is summed to give a total MS for each patient. To test for the applicability of MS, analysis was done on 26 patients using no. of AEDs and MS data from initiation and their last clinic visit. The linear correlation between the change in no. of AEDs and the change in MS is significant but weakly moderate ( $p=0.03$ ,  $R=0.42$ ). The significance is evidence for the reasoning that the change in no. of AEDs and MS measures the same variable but the weak linear correlation illustrates that MS provides different and more information than the change in number of AEDs. For example, after starting KT, 7 patients were on 2 fewer AEDs but their change in MS varied from -12 to 5. The analysis indicates that MS may be a more useful indicator of efficacy of KT.