



# Kaplan Meiers Method in Comparison and Randomised Clinical Trials of Valproate Versus Lithium and Carbamazepine in Treatment of Bipolar Patients in Albania

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## **Abstract:**

*Background:* The Kaplan Meir procedure is a method of estimating time-to-event models in the presence of censored cases. Kaplan Meier (K-M) model is based on estimating conditional probabilities at each time point when an event occurs and taking the product limit of those probabilities to estimate the survival rate at each point in time.

*Aims:* Application of Kaplan Meier method to compare the efficacy of Valproate versus lithium and carbamazepine in the long-term treatment of bipolar patient.

*Method:* 235 patients with at least two episodes of bipolar disorders (DSM-IV) in Psychiatric service in UHC-Tirana. We have estimated age, sex, education, occupation, comorbidities, types and subtypes of bipolar disorders. This is a longitudinal, comparison and randomized clinical trial, with a duration of 2 years, three equal parallel-groups with open label pre-randomized phase. Primary outcome measure was time to relapse/recurrence to any mood episodes and Survival analyses was performed.

*Results and Discussion:* Long- rank test was used to test the significant difference between the survival experiences of bipolar patients. Cumulative survival for valproate's group was 26% higher than carbamazepine's group. While mean and median survival time were respectively 35% and 53% longer for valproate. Carbamazepine showed approximatively the same effect as valproate in some subtypes of bipolar disorders and with comorbidity.

*Conclusion:* Kaplan Meier is an useful method to estimate the comparison effect of Valproate versus Lithium and carbamazepine. Valproate is significantly more effective than lithium and carbamazepine in prophylactic treatment of bipolar disorders.

## **Keywords**

Bipolar Disorders, Censoring, Kaplan-Meier, Log-rank Test, Long Term Treatment