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# Determination of Gabapentin and Rabeprazole in Human Plasma by Using High-Performance Liquid Chromatography and its Application to Therapeutic Drug Monitoring

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## ABSTRACT

**Background:** Gabapentin is an anticonvulsant drug developed to treat epilepsy. In recent years, the use of this medicine has increased in a variety of indications. Rabeprazole, a proton pump inhibitor, is mainly given in combination with gabapentin. The study aims to simultaneously estimate gabapentin and Rabeprazole and to monitor the therapeutic activity of gabapentin in human plasma samples.

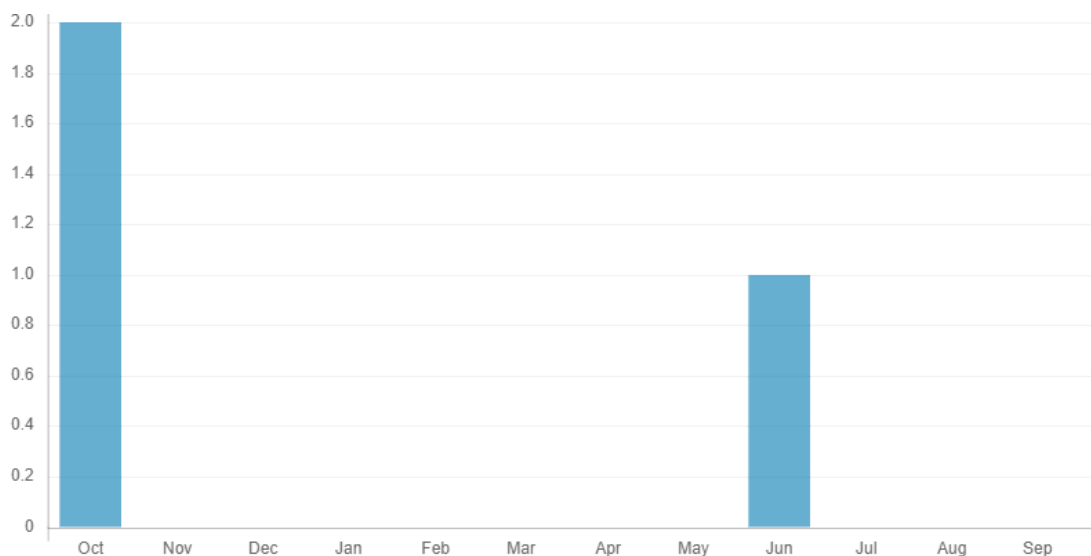
**Method:** To determine the plasma concentration of gabapentin in participants, a bioanalytical method was developed and validated using high-performance liquid chromatography. Forty-two epileptic participants received doses of gabapentin ranging from 100 to 800 mg, and

plasma concentrations were examined. The average mean serum concentration for males was 723.64 ng/ml; for females, it was 1770.07 ng/ml.

**Results:** The concentration of male to female ratio for gabapentin was 71:29 with Rabeprazole as comedication, Total mean serum concentration of levetiracetam from males is 723.64ng/ml and females is 1770.07ng/ml. Welsch ttest was plotted with males and females ranging from 31 to 11 sizes as an unpaired ttest with  $p=0.0035$  ( $p\leq 0.05$ ). TDM was still shown to be effective in the majority of patients to support dosage increases and individualization of therapy.

**Conclusion:** The method proposed for measuring gabapentin concentration was convenient, reproducible, and specific. Only detailed clinical justifications should be used to request TDM and the service should be tailored to the therapeutic indication.

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**KEYWORDS:** Gabapentin, Rabeprazole, Therapeutic Drug Monitoring, Method Development



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