



## 677C > T and 1298A > C *MTHFR* polymorphisms affect arechin treatment outcome in rheumatoid arthritis

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### Abstract:

Despite the availability of several new agents for the treatment of rheumatoid arthritis (RA), arechin (hydroxychloroquine) remains the mainstay because of both cost-effectiveness and experience with its use. However, there is considerable variation in response to this drug, with toxicity limiting treatment in some patients. Methylene tetrahydrofolate reductase (*MTHFR*) is involved in the folate metabolism and has been shown to be polymorphic what affects the enzyme activity. To examine the association between 677C > T and 1298A > C *MTHFR* polymorphisms and arechin efficacy in the treatment of RA, a total of 50 RA patients, treated with arechin were analyzed.

In univariate regression analysis model, *MTHFR* 677T allele was associated with significantly higher frequency of remission, whereas 1298C allele carriers showed a tendency to higher remission rate. In univariate regression analysis model, the presence of *MTHFR* 677T allele was associated with 2.3-fold higher frequency of remission. Multivariate regression analysis taking into the account the combined effect of *MTHFR* 677T and 1298C alleles revealed that both alleles were independent factors associated with increased frequency of remission. The results of our study suggest that 677T and 1298C alleles are independent factors associated with increased frequency of remission and the evaluation of C677C > T and A1298A > C *MTHFR* polymorphisms may be a useful tool to predict arechin treatment outcome in RA patients.

### Key words:

*MTHFR*, polymorphism, arechin, rheumatoid arthritis

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