Background: Therapeutic control of the level of MTXPGs in erythrocytes may be an objective marker of its effective dose in RA treatment. Objectives: To evaluate the relationship between the level of MTXPGs in erythrocytes and the effectiveness of the dose of MTX used by RA patients. Methods: The study included 60 random selected RA patients over the age of 18, 16 men and 44 women. The diagnosis in all cases met the criteria of ACR/EULAR 2010. All pts received MTX at a constant dose of at least 20 mg per week subcutaneously for at least the last 12 weeks. Patients were divided into 2 groups depending on the presence (group 1, n = 30) or absence (group 2, n = 30) of the therapeutic effect of MTX, according to the criteria of the EULAR response to therapy. The groups were comparable in age, sex, alcohol intake, smoking, body mass index (BMI), ACPP-positivity, incidence of unwanted reactions to MTX. Results: The relationship between the level of MTXPGs and effectiveness of MTX treatment was evaluated using linear regression analysis. There were no significant differences in the levels of MTXPG1,2,3,5 between the groups. MTXPG4 levels were significantly higher in group 1 (22.1 ± 6.8 nmol/l) compared to group 2 (18.8 ± 4.6 nmol/l). Conclusion: The study suggests that measuring the level of MTXPG4 in erythrocytes may be an objective marker of its effective dose in RA treatment.