3rd International Conference on
Clinical & Experimental Dermatology
April 15-17, 2013, Hilton Chicago/Northbrook, USA

The validity of Methotrexate polyglutamate assay in treating pediatric skin conditions

Syed I. Rahman
Saint Louis University, USA

Abstract

Methotrexate has been used to treat inflammatory skin conditions; however, there is limited data with regard to pharmacokinetic, dosage adjustment, and clinical response. The methotrexate polyglutamate (MTX PG3) assay was developed as a marker to measure methotrexate activity *in-vivo* in determining the optimal therapeutic range in patient management. Our objective was to evaluate the methotrexate polyglutamte assay in assessing whether the measurable methotrexate metabolite correlates with a clinical response in pediatrics patients with inflammatory skin diseases treated with methotrexate. A retrospective chart review was performed on 47 children from SSM Cardinal Glennon Children's Medical Center with a median age of 8 yrs. (range, 2-17 yrs.) and mean treatment duration of 363.42 days over a 24 month period. MTX PG3 levels were recorded from the MTX PG3 assay. Clinical treatment was evaluated using a Physician Global Assessment scale (0= clear, 1= almost clear, 2= mild, 3= moderate, and 4= severe) re-classified into 0= poor/fair and 1= good/excellent. Patients were categorized into responders, defined as patients changing from poor/fair to good/excellent, and non-responders, defined as patients remaining at poor/fair. Late-responders, defined as children responding after 12 months, were compared with non-responders using mean maximum and mean percent change in MTX PG3 levels. Data was analyzed using statistical t-tests. 47 patients were stratified into two groups: responders 38/47 (81%) and non-responders 9/47 (19%). Responders and non-responders had a mean MTX PG3 level of 31.5 and 22.3, respectively, p=0.138. Late-responders and non-responders had a mean change of 42.6% and 19.1% and mean maximum of 41.9 and 22.3 MTX PG3 levels, respectively, p=0.01. This study has been limited primarily by a small sample size. MTX PG3 levels do not correlate with clinical response between responders and non-responders. However, amongst late and non-responders, MTX PG3 assay remains a viable test in adjusting dosage in association with clinical response. In the end, MTXPG3 levels are more predictive for late than early responders.

Biography

Syed I. Rahman is a third year medical student at Saint Louis University Medical School who has published. He is working with Dr. Elaine Siegfried, certified pediatric dermatologist, who serves on the Editorial Advisory Board of Dermatology Times as well as on a number of professional organizations. She is author or co-author of more than 80 original papers, abstracts, and book chapters.