Pediatric Rheumatology

Poster presentation

Investigating which variables from the core outcome variables in juvenile idiopathic arthritis (JIA) are the best predictors of classification as a responder to treatment with methotrexate (MTX)

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This abstract is available from: http://www.ped-rheum.com/content/6/S1/P120

Background
Percentage change scores over six core outcome variables (COV) are utilised to classify response to treatment in JIA. This study aimed to determine the relative contribution of each of the COV towards the classification of improvement following treatment, at the ACR30, 50 and 70 levels.

Methods
Using a dataset of 410 JIA patients treated with MTX, (provided by PRINTO) 3 sets of logistic regression analyses were conducted, one at each classification level, to determine the likelihood of a classification of improvement. For each level a series of univariate logistic analyses were conducted to identify, from the six COV, individually significant ($p < 0.05$) predictors of improvement. These variables were entered into a stepwise multivariate logistic analysis to identify independent predictors of classification ($p < 0.01$) at each level.

Results
For all three classification criteria, each core variable change score was an individually significant predictor of improvement as classified using classical procedures. Within multivariate analyses, physician global rating was the 'best' indicator of improvement at all criteria levels. ESR did not contribute significantly above other variables in all the multivariate analyses. The remaining variables all contributed significantly in the 30% and 50% models. The limited variable models showed relatively good classification of cases, 93.9%, 89%, and 87.3% at the 30%, 50% and 70% levels respectively.

Conclusion
Individually all the core variables are important indicators of improvement in JIA. However, when used in combination a limited set of variables can lead to a relatively accurate indication of response to treatment by JIA patients.