



## **Translation and validation of the MTX Intolerance Severity Score questionnaire for Portuguese version in Brazil in Juvenile Idiopathic Arthritis.**

Ana Carolina Santos Londe (UNICAMP, Campinas, SP, Brasil), Roberto Marini (UNICAMP, Campinas, SP, Brasil), Simone Appenzeller (UNICAMP, Campinas, SP, Brasil)

### **BACKGROUND**

Methotrexate (MTX) is the first-choice disease-modifying antirheumatic drug (DMARD) for the treatment of juvenile idiopathic arthritis (JIA). During therapy, there are frequent reports of discontinuation of MTX, through the MTX Intolerance Severity Score questionnaire (MISS), we determined the prevalence of MTX intolerance.

### **MATERIALS AND METHODS**

MISS was translated into Portuguese following the “Guidelines for the process of cross-cultural adaptation of

self-report measures”. The MISS consists of 4 domains: stomachache, nausea, vomiting, and behavioral complaints. The total score was 0 to 36 and the intolerance was defined by a score of 6 or more. Psychometric properties were analysed according with the Consensus based Standards for the Selection of Health Measurement Instruments (COSMIN), so we used acceptability for each item; internal

consistency using Cronbach’s alpha coefficient and reproducibility assessed by Kappa. We plot the ROC curve to evaluate the discriminant validity of the MISS and cut-off score was determined.

### **RESULTS**

We included 220 subjects, 144 patients with JIA in use for least 3 months of MTX and 76 parents followed at the pediatric

rheumatology Unit. The median age of patients were 18.3 SD±8.7 years, 73% were females and the JIA subtype most frequently observed was polyarticular. All the subjects answered the MISS with less than 5 minutes. Internal consistency of MISS

had a Cronbach's alpha = 0.851 (patients) and 0.805 (parents), considered good ( $\geq 0.8$ ). Reproducibility between the test (40 patients) and then retest after 15 days (36 patients) was almost perfect ( $\kappa > 0.8$ ). Reliability between patients and parents

was almost perfect ( $\kappa > 0.8$ ), except stomachache (anticipatory with  $\kappa = 0.30$ ); considered weak ( $\kappa = 0.2 - 0.4$ ) and stomachache by association ( $\kappa = 0.54$ ); considered moderate ( $\kappa = 0.4 - 0.6$ ). We found through MISS, 66 tolerant (45.8%)

with median total score of 2.42 SD  $\pm$  1.75; while the intolerant were in 78 patients (54.2%) with a median total score of 12.85 SD  $\pm$  5.47. ROC curve was 0.89 (95% CI 0.83–0.96), indicating that 89% of the patients were classified correctly with the MISS. Our cut-off scores of 6 showed the best sensitivity (83%) and specificity (80%).

### **CONCLUSION**

MISS is a good tool for physicians, because it can not only measure the intolerance, but also explore the different forms in which it manifests.