8. EVALUATION OF ADIPOSITY INDICES IN PEDIATRIC RHEUMATOLOGICAL DISORDERS

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Introduction. The Body Mass Index (BMI) is currently the most used indicator that assesses the nutritional status of children and adults, but it cannot fully reflect the difference between excess adipose tissue and that of muscle mass. The Tri-Ponderal Mass Index (TPI) is used as an alternative to calculate body weight recently, being successfully used to determine obesity, but also cardiovascular and metabolic risk factors. Data comparing BMI and TPI in the pediatric population with rheumatic pathology are currently not available.

Aim of study. To evaluate the effectiveness of the TPI, as well as to compare the usefulness of the TPI and BMI in assessing the growth and development of children.

Methods and materials. Our study included 881 children, hospitalized for a period of 2 years, in the Rheumatology section of the Mother and Child Institute, between December 1, 2021 and November 30, 2023. The value of the anthropometric indicators was calculated by age groups of children, as well as evaluated according to gender. The data were analyzed using the Microsoft Excel Office365 calculation program.

Results. Of the 881 children included in the study, 394 (44.72%) were boys and 487 (55.28%) were girls. The mean age of the children included in the study was 10.73±4.54 years (95% CI:10.43;11.03), with a ratio of girls/boys 1.23:1.0. The average values of the anthropometric indicators evaluated in the study were for BMI 18.38 ± 3.92 (95% CI: 18.12;18.64), and for TPI it was 12.96 ± 2.90 (95% CI :12.76;13.15). Under the age of 3 years, 85 children were registered, of which 47 boys and 38 girls, between 4 and 10 years, 287 children (140 boys, 147 girls), and most of the children included in the study (57.78%) were older than 14 years (509 children: 207 boys, 302 girls). BMI in children up to 3 years was 15.56 ±2.08 (95% CI:15.11; 16.01), and TPI included a value of 17.15±3.65 (95%CI:16,36;17,94). In children aged between 4 and 10 years, BMI included a value of 16.49±3.67 (95%CI:16.06;16.92), and TPI was 12.89±2.76 (95%CI: 12.57;13.21). Most of the children included in the study obtained a value of 19.92±3.54 (95% CI: 1.

Conclusion. TPI represents an eloquent parameter of nutritional status and can be used to assess the growth and development of children, both in boys and girls. It can also be a predictive element of obesity and metabolic syndrome, as well as its associated factors. The TPI estimates body fat percentage more accurately than BMI in study children, and requires only one value for each gender, instead of the multiple complicated age- and gender-specific values required for BMI to be used especially in adolescents.