

Poster presentation

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Analysis of ceiling effect and score distribution of outcome measures in juvenile idiopathic arthritis (JIA)

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Background

The ceiling effect and skewness of score distribution (i.e. tendency for scores to cluster at or towards the normal end of the scale) are potential limitations of outcome measures used in JIA.

Objective

To characterize ceiling effect and score distribution of the main JIA outcome measures.

Methods

A total of 1818 visits made from 1989 to 2006 were examined. Percentage of patients with score = 0 and score distribution were assessed for physician and parent global assessments, CHAQ, joint counts, and ESR.

Results

Frequency of ceiling effect for each measure is shown in table 1. Physician global assessment revealed a tendency towards normal distribution, whereas all other measures were skewed towards the normal end of the scale. However, physician global assessment scores tended to cluster

at the two ends of the scale (i.e. towards the 0 and 10 scores). In 69.2% of the visits CHAQ score was > 0.5%. In 19.9% of the visits 5 or more active joints were detected.

Conclusion

Ceiling effect was greater for ESR, CHAQ and tender and restricted joint counts. In only 1/5 of the visits made in a wide time frame JIA patients receiving routine care in a tertiary center met inclusion criteria (i.e. active joint count ≥ 5) for recent clinical trials of second-line or biologic agents.

Table 1:

| | Physician global | Parent global | Parent pain | CHAQ | No. swollen joints | No. tender joints | No. restricted joints | No. active joints | ESR* |
|-------------|------------------|---------------|-------------|------|--------------------|-------------------|-----------------------|-------------------|------|
| % score = 0 | 20.2 | 22.7 | 26.7 | 40.8 | 27.1 | 36.5 | 34.2 | 23.1 | 51.7 |

*% < 20 mm/h.