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The Natural History of Idiopathic Scoliosis During Growth: A Meta-Analysis.

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Abstract

OBJECTIVE: The aim of the study was to provide a meta-analysis of current literature concerning the natural history of idiopathic scoliosis during growth.

DESIGN: A comprehensive search of Medline, Embase, And Scopus databases was conducted up to November 2016. Eligible works were prospective or retrospective studies that enrolled patients with infantile idiopathic scoliosis, juvenile idiopathic scoliosis, or adolescent idiopathic scoliosis, followed up without any treatment from the time of detection. A meta-analysis for proportion was performed. The following studies were grouped per diagnosis: infantile idiopathic scoliosis, juvenile idiopathic scoliosis, and adolescent idiopathic scoliosis.

RESULTS: Of the 1797 citations screened, we assessed 61 full-text articles and included 13 of these (2301 participants). Three studies included infantile idiopathic scoliosis patients (347 participants), five studies included a mixed population of juvenile idiopathic scoliosis and adolescent idiopathic scoliosis (1330 participants), and five studies included adolescent idiopathic scoliosis patients only (624 participants). The random pooled estimated progression rate was 49% (95% confidence interval = 1%-97%) for infantile idiopathic scoliosis, 49% in a mixed group of patients affected by juvenile idiopathic scoliosis or adolescent idiopathic scoliosis (95% confidence interval = 19%-79%), and 42% in adolescent idiopathic scoliosis (95% confidence interval = 11%-73%).

CONCLUSIONS: During growth, idiopathic scoliosis tends to progress in a high percentage of cases. The progression rate varies according to the age at diagnosis, with infantile scoliosis being the most unpredictable. There are many confounders, such as age, Risser sign and baseline Cobb angles that were not consistent among studies, making the data very heterogeneous.

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