

Prevalence of Scoliosis in Children and Adolescents with Cystic Fibrosis update

Background. The prevalence of scoliosis in people with cystic fibrosis (CF) seems to be greater than in the normal population.

Objectives. The aim of this study was to assess the prevalence of scoliosis and other spinal deformities in our cohort of children and adolescents with CF. Over the five years, a screening for spinal deformities was carried out in patients with CF aged 5 to 18 years, followed up at the CF regional Centre in Parma (Italy).

Methods. Between 2021 and 2025, all children with CF aged 5–18 years attending Parma CF Centre (Italy) were screened for spinal deformities, including scoliosis and kyphosis, by physiatrists and physiotherapist with experience in clinical practice approaches to IS during growth. The assessment was based on evidence-based clinical guidelines for postural evaluations on the frontal plane and sagittal profile (Adam's forward bending test, Angle of Trunk Rotation (ATR) measured with a scoliometer, plumbline imbalance). In the case of clinical suspicion, X-rays of the spine barefoot and in standing position (PA and LL view) were performed, and the Cobb angle was measured by physiatrists. Scoliosis was defined as a Cobb angle of more than 10° in AP projection and a curvature classified as cervical (apex between C2 and C6), cervicothoracic (apex between C7 and T1), thoracic (apex between T2 and T11) or thoracolumbar (apex between T12 and L1); the side of convexity was also recorded. Patients were then treated according to the literature. The diagnosis of kyphosis was made by clinical examination and, when needed, X-rays of the spine barefoot and in standing position (LL view); postural kyphosis has been defined as a non-structural but reversible kyphosis .

Results. 50 patients were enrolled in the study. 12 patients were diagnosed with scoliosis, with a mean Cobb angle of 20.8 ± 9.4 (12–38°). 8 patients (11.6%) were diagnosed with a postural kyphosis attitude and one with pathological fixed kyphosis. All patients with scoliosis and postural kyphosis started daily physiotherapeutic scoliosis-specific exercises (PSSE).

Conclusion Compared to people without CF, the prevalence of scoliosis in our paediatric CF population seems to be higher and more present in males; the curves were thoracic and mostly right-sided. Since the prevention of musculoskeletal deformities is easier than restoration, in CF population targeted screening during growth and interventions, including regular physical exercise, are mandatory.