KS.3.2 Idiopathic Scoliosis: Novel Challenges for Researchers and Clinicians

Zaina F[1]
[1]ISICO (Italian Scientific Spine Institute), Milan, Italy

Scoliosis is a three-dimensional deformity of the spine and trunk. Despite a well-documented genetic predisposition, the aetiology remains obscure, with experts considering it a multifactorial pathology. Some studies have documented and described its progression being mainly due to biomechanical factors. This led to the impossibility of any etiological treatment, making it mandatory to act on its consequences. Treatments aim to guide vertebral growth, revert the deformity and recover a more physiological morphology.

While we wait for a deeper understanding of the aetiology, there are novel challenges that clinicians and researchers must face. After focusing on effectiveness for decades, research concerning bracing should now focus on protocols and biomechanical effectiveness. The high dosages are a documented key factor for success. However, details about the weaning phase, the role of exercise, materials and design are still scant, with few papers directly comparing different approaches. A novel classification of bracing has been developed and could act as a starting point for this novel challenge, together with shared guidelines on brace management and building. Moreover, the results reported in the current literature are very different due to factors such as efficacy, the quality of the braces and the compliance of patients. Another obstacle that makes comparisons challenging is that when effectiveness is very low, for whatever reason (compliance issues, low number of hours prescribed, poor quality braces, etc.), all braces seem to have the same effects. Defining the minimum required efficacy of braces for research studies could be another crucial advancement.

Evidence for PSSEs is quite promising, with novel methods based on small changes to existing ones appearing and, therefore, making it more complicated for clinicians to interpret and apply data from the literature. The current consensus about the fundamental role of active self-correction in PSSE should probably be the standard base for a comprehensive approach, including all the schools supported by published data. Future improvements should be built on such a comprehensive approach and shared within the research and clinical community, and not be the starting point for the purpose of splitting it into different methods.

In conclusion, in recent decades, knowledge on idiopathic scoliosis and its treatment has grown thanks to broader interest in and better quality of research. Nevertheless, some areas are still under investigation, and poor-quality articles are still being published. We need to focus on these areas and provide the best possible evidence for the sake of our patients.