Title: Investigating the Effect of the Orthotic Treatment on Sagittal Plane Pelvic Parameters in Adolescents with Idiopathic Scoliosis: Literature Review

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Introduction:

Adolescent idiopathic scoliosis (AIS) is a three-dimensional deformity of the spine with lateral curvature combined with vertebral rotation. Morphologic changes in scoliosis alter the orientation of skeletal system specially the spinopelvic parameters in all three planes. Cobb angle is the only index used to predict the curve improvement which is in the coronal plane. Thus, pelvic parameters are almost neglected, hence the study of these parameters as indexes in the sagittal plane can provide information about other aspects of brace treatments.

Methods:

An Internet search about AIS, orthosis and brace treatments and sagittal pelvic parameters was performed in bibliographic databases like: PubMed, Google Scholar, Science Direct, Medline, Cochrane Library and etc to obtain relevant publications. Publications selected based on the type of the AIS's treatment and if there were any measurement or study of sagittal pelvic parameters.

Results:

Pelvic Incidence (PI), Pelvic Tilt (PT) and Sacral Slope (SS) are the main sagittal pelvic parameters. Lumbar lordosis is related with sagittal pelvic parameters specially PI and SS. Because of the relationship between lordosis and sagittal pelvic parameters, they can be used as sagittal plane indexes to predict the improvement procedure and treatments' outcome.

Conclusion:

Pelvic parameters are related with lordosis, changes in lordosis itself in the chain of spinopelvic related to kyphosis. Kyphosis and lordosis are the main parts where were focused to treat the deformity of AIS and cobb angle in these two parts is the main index that shows if the brace treatment is effective. Apparently, there is a relationship between spinopelvic parameters in the skeletal chain. Nevertheless, this relation is clear, there is not any index in the sagittal plane to refer to. So, introducing another index in another plane besides cobb angle, can be very helpful to all the society which handling with.

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Biography:

As a MSc. in Orthotics & Prosthetics during my education I was working on the spinopelvic parameters in AIS especially pelvic parameters which are not examined in this deformity. I have published the recent article about pelvic parameters in AIS in Annals of Physical and Rehabilitation Medicine Journal. Also, another article about the related subject recently was accepted in **Turkish Journal of Physical Medicine and Rehabilitation** which was based on my thesis.