SagittalMeter Pro

A study of Lee et al., from the Department of Neurosurgery, Catholic University of Korea St. Vincent's Hospital, Gangneung Asan Hospital, South Korea aimed to compare the validity, reproducibility, precision, and efficiency of a picture archiving and communication system (PACS) and a smartphone application which is an educative app to easily measure sagittal balance parameters (SagittalMeter Pro) for measuring spinopelvic sagittal parameters.

Three spine surgeons measured lumbar lordosis (LL), pelvic incidence (PI), sacral slope (SS), and pelvic tilt (PT) on standing postero-anterior radiographs of 30 patients using PACS and SagittalMeter Pro. Measurements were repeated a week after original measurements. Intra-observer and inter-observer variabilities and reliabilities of each parameter (LL, PI, SS, and PT) were calculated for both techniques. Comparisons were performed using the paired t test. Results are expressed as means ± SDs and p values of <0.05 were considered significant.

PACS to SagittalMeter Pro differences between the mean absolute values of LL, PI, SS, PT were 0.50°, 0.82°, 0.81°, 0.34°, respectively, and intra- and inter- observer variabilities were similar. Excellent intra- and inter- observer reliabilities were obtained for PACS and SagittalMeter Pro as demonstrated by values greater than 0.86 and 0.84, respectively. Measurement times for PACS and SagittalMeter Pro were 36.63±7.55 and 14.57±1.96 seconds, respectively, and this difference was significant (p=0.001).

The study shows PACS and SagittalMeter Pro are equivalent in terms of their abilities to measure spinopelvic sagittal parameters, and that the time required to take measurements was significantly less for SagittalMeter Pro. We believe SagittalMeter Pro may be helpful when planning spinal surgery [1].

1)
Lee JB, Kim IS, Lee JJ, Park JH, Cho CB, Yang SH, Sung JH, Hong JT. Validity of a smartphone application (SagittalMeter Pro) for the measurement of sagittal balance parameters. World Neurosurg. 2018 Dec 14. pii: S1878-8750(18)32808-0. doi: 10.1016/j.wneu.2018.11.242. [Epub ahead of print] PubMed PMID: 30557655.