INTRODUCTION

• Identifying skeletal age (SA) is important in disease treatment dependent on growth, including adolescent idiopathic scoliosis (AIS).
• No true gold standard exists for SA, therefore several radiographic (XRs) methods are used including hand, elbow, pelvis, and knee XRs.
• Most commonly used is a left hand XR.
• Determining SA using hand, elbow, and pelvis XRs is common practice in our pediatric spine clinic. However no published studies exist that evaluate the combined use of all 3.
• Our primary objectives are to identify the 3 SA methods, 1 method per XR, that best correlates with chronological age (CA); and determine if using 3 XR methods correlates better with CA than any 1 or 2 XR methods.
• Our secondary objectives are to perform sub-analyses with regards to sex, race, and age ranges as our data allows.

HYPOTHESIS

• We believe using these 3 XRs to determine SA correlates with CA better than any combination of 1 or 2 XR SA methods alone, and will be a better evaluation of growth remaining.

METHODS

• Retrospective cross-sectional chart review of 225 pts evaluated at our New Patient Spine Clinic. 109 pts were included, 92 girls, 17 boys.
• Inclusion: AIS, 2012-2018, girls 9-15yrs, boys 11-17yrs, all XRs obtained on same date
• Exclusion: History affecting XRs obtained, osseous abnormalities, inadequate XRs
• 3 blinded evaluators: senior attending, junior attending, and senior resident
• Hand XR: Greulich and Pyle, Tanner-Whitehouse 3 (TW3), and Sanders;
• Elbow XR: Dimeglio
• Pelvis XR: Risser sign and tri-radiate

RESULTS AND DISCUSSION

• Results pending

REFERENCES

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