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Background: Uncertainty in reporting of imaging findings for necrotizing enterocolitis (NEC) can be challenging for clinicians and result in ambiguity, miscommunication, and potential diagnostic errors. The degree to which uncertainty complicates diagnostic imaging for NEC has not been characterized.

Objective: To determine the degree of uncertainty in diagnostic imaging for NEC.

Methods: We conducted a retrospective study using data from a previously completed pilot diagnostic randomized clinical trial (RCT). The study population comprised of preterm infants with suspected NEC who were randomized to either standard imaging with abdominal radiographs (AXR) alone or experimental imaging with *AXR + add-on bowel ultrasound (BUS)*. Level of uncertainty was determined using a 4-point Likert scale. Our primary outcome was uncertainty scores for *pneumatosis*, portal venous gas, and free air. Secondary outcomes included rates for complete reporting, use of standardized templates, and inclusion of diagnostic certainty scale.

Results: Sixteen preterm infants (mean gestational age 27.2 ± 2.2 weeks, mean birth weight 1020 ± 373 grams) with concern for NEC underwent 113 AXR and 24 BUS as part of a pilot diagnostic RCT. Overall, BUS had less uncertainty for reporting each of the three main NEC findings compared to AXR (*Pneumatosis*: 1 [1 − 1.75] vs 3 [2 − 3], P<0.0001; *PVG*: 1 [1 − 1] vs 1 [1 − 1], P=0.02; *Free air*: 1 [1 − 1] vs 2 [1 − 3], P<0.0001). BUS reports also had higher rate of complete reporting compared to AXR reports (96% versus 52%, P<0.001). Rates of standardized reporting template (88% vs 16%, P<0.001) and diagnostic certainty scales (96% vs 16%, P<0.001) were also higher in BUS reports compared to AXR reports.

Conclusion: Our results suggest that the superior technical accuracy of BUS allows radiologists to report important NEC findings with less uncertainty compared to AXR. The substantial decrease in uncertainty with BUS provides additional evidence to support the use of BUS as an adjunct to AXR for NEC diagnosis. Further studies are needed to determine whether improved certainty results in improved clinical outcomes.