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DIPG-60. OPERATIVE PERFORMANCE OF RAPNO DIPG CRITERIA FOR IMAGING REVIEW: A STUDY FROM THE INTERNATIONAL DIPG/DMG REGISTRY (IDIPGR)
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BACKGROUND: The Response Assessment in Pediatric Neuro-Oncology (RAPNO) working group for diffuse intrinsic pontine glioma (DIPG) recently published its recommendations. Response criteria incorporate radiologic findings, neurologic status, and use of concurrent steroids and antiangiogenic drugs to define response. To test the operative performance of the imaging component, we retrospectively applied RAPNO DIPG recommendations to a convenience sample of 46 patients enrolled in the International DIPG/DMG Registry(IDIPGR). METHODS: MRIs were independently reviewed by 2 pediatric neuro-radiologists. These measurements were analyzed utilizing RAPNO DIPG imaging criteria to categorize the response as complete response (CR), partial response (PR), stable disease (SD), or progressive disease (PD). For PR evaluation, each MRI was compared to the baseline MRI, and for PD evaluation, each MRI was compared to the MRI with the smallest cross-sectional measurement. The response category for each MRI was compared between 2 neuro-radiologists and was classified as concordant if they agreed, minor discordant if one reported SD and the other reported PR or PD, and major discordant if one reported PR and the other reported PD. RESULTS: A total of 276 paired MRIs were analyzed. Sixty-seven percent of the time, the analyzed response assessment was concordant. In 31% discordant reads, 26% were minor discordant, and 7% were major discordant. There were no CRs reported. Further analysis of minor discordant cases showed that 62% of these cases were within 10% of the boundary for PR or PD. The median difference between 2 neuro-radiologists’ long axis measurements was 2 mm (range 0-27 mm) and short axis measurements was 2 mm (range 0-29 mm). These small differences in measurements account for all discordant response categories between 2 neuro-oncologists. CONCLUSION: This study demonstrated that RAPNO DIPG imaging criteria can be successfully applied with high concordance between readers. When discordant, measurements were largely at the boundaries of response type.