

Assessment of Variability of Pediatric Brain Tumor Imaging Protocols Across Institutions: Are We Following Recommendations?

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BACKGROUND

- Pediatric brain tumors require specialized imaging for accurate staging.
- Variability in MRI protocols across institutions may lead to staging inaccuracies.
- Recent consensus guidelines aim to standardize pediatric brain tumor imaging, but adherence varies.

OBJECTIVES

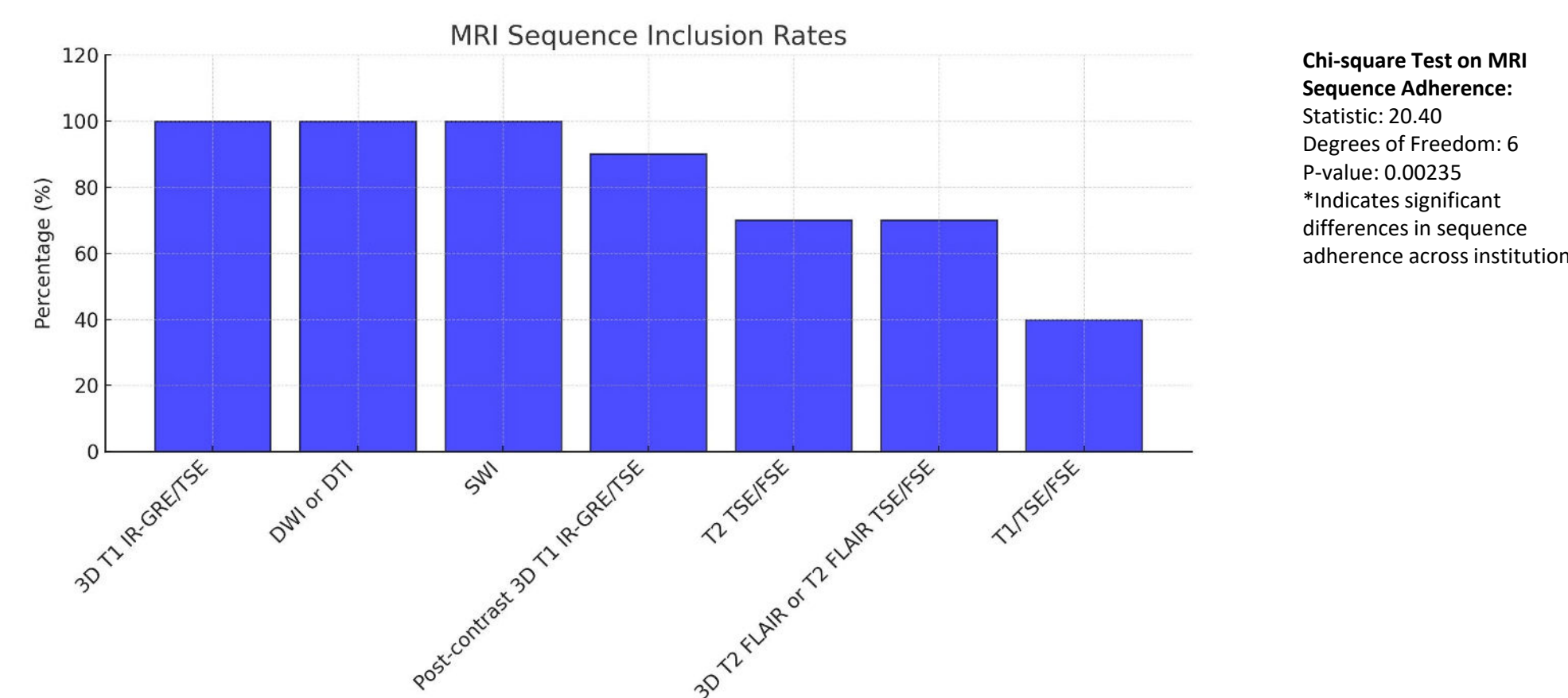
- Evaluate the variability of pediatric brain tumor MRI protocols across different institutions.
- Determine the extent of adherence to established consensus guidelines.
- Identify factors that influence deviations from these guidelines in clinical practice.

METHODOLOGY

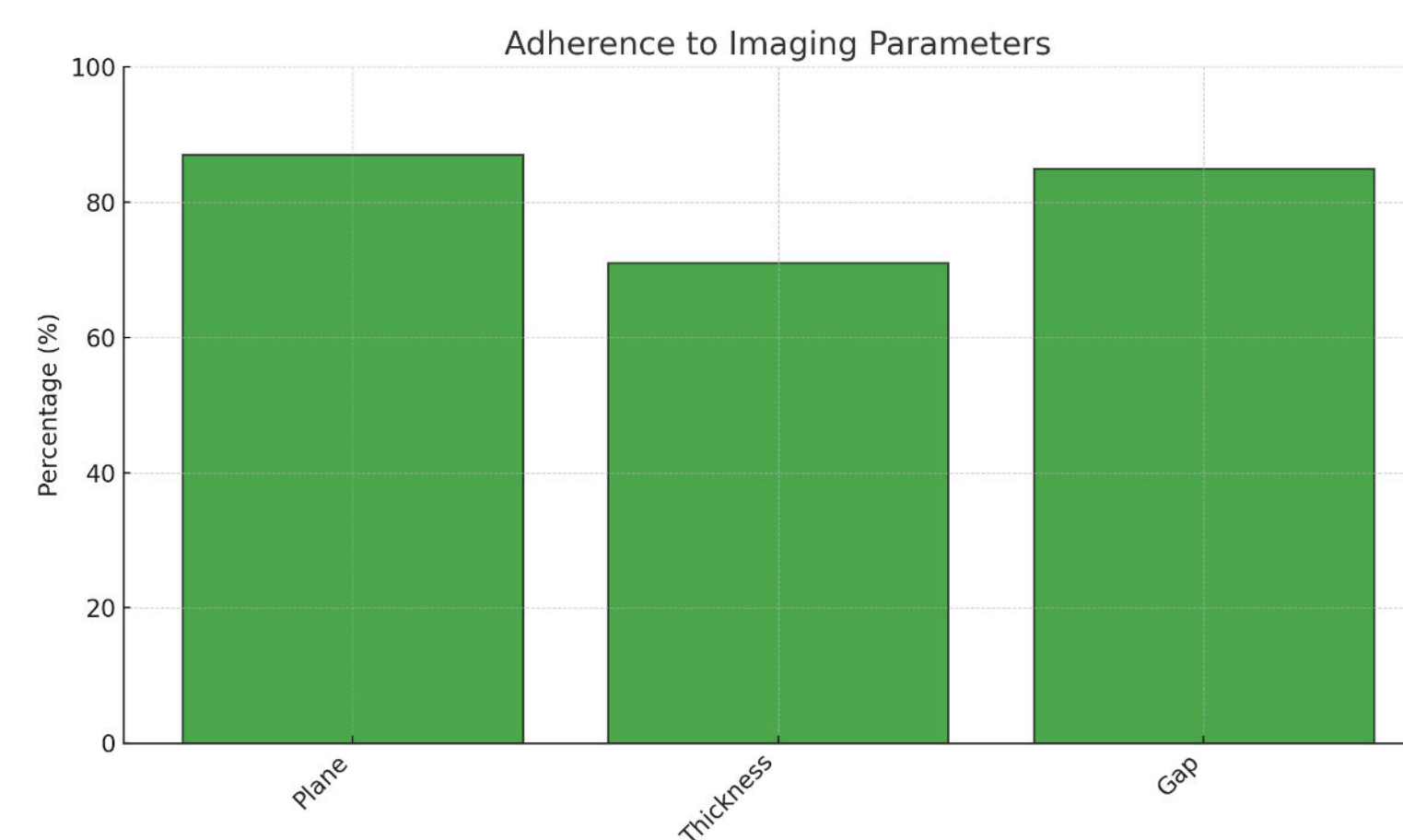
- Survey distributed to faculty at institutions routinely imaging pediatric brain tumors.
- Participants shared their MRI protocols and completed a survey with both multiple choice and open-ended questions.
- Focus on adherence to the Children's Oncology Group (COG) guideline's 7 minimum recommended MRI sequences, assessing parameters like slice thickness and gap.
- Coding of open-ended responses to identify thematic patterns.

RESULTS

- Surveys sent to 20 institutions with 12 responses; data collection ongoing.
- 2 institutions lacked dedicated MRI protocols for pediatric brain tumors.
- Average number of COG-recommended sequences used was 5.7 out of 7.
- High inclusion rates for sequences like 3D T1 IR-GRE/TSE, DWI/DTI, and SWI.
- Variability noted in the inclusion of T2 sequences and compliance with imaging parameters.



MRI Sequence Inclusion Rates: This bar chart shows the percentage of institutions that include each of the recommended MRI sequences in their protocols. You can see that all institutions include the basic sequences like 3D T1 IR-GRE/TSE, DWI or DTI, and SWI, but fewer institutions include the T1/TSE/FSE.



Adherence to Imaging Parameters: This chart illustrates the percentage of institutions that adhere to the recommended imaging parameters for plane, thickness, and gap. The adherence rates vary, indicating areas where further standardization could be beneficial.

CONCLUSION

- There is significant variability in the imaging protocols used across institutions.
- This variability can impact the quality and consistency of pediatric brain tumor care.
- Significant variability in pediatric brain tumor imaging protocols exists across institutions. Given that this is an ongoing project, results may change as more data is collected.

RECOMMENDATIONS

- Stronger efforts needed to promote and ensure adherence to consensus guidelines.
- Consideration of guidelines as standard practice rather than just for research.
- Encourage collaborative efforts to standardize MRI protocols in pediatric brain tumor imaging.

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