Lay Summary

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Characterization of rare neuronal and glial tumour types to increase diagnostic accuracy, identify treatment targets and improve prognostication

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In the past, diagnosing brain tumours involved studying stained tissue samples under a microscope. But in the last decade, DNA methylation profiling, a modern molecular technique, has become crucial in diagnosing these tumours. This technique has not only improved the accuracy of diagnosis but also helped identify new subtypes of tumours and predict patient outcomes and responses to treatment.

However, there are still challenges when it comes to rare types of neuronal and glial tumours. There aren't enough patient samples for a thorough study of these tumours and their variations. This makes it difficult to establish treatment protocols as there's limited information on how these tumours progress and affect survival rates.

Moreover, while methylation profiling has been beneficial, it's still challenging to diagnose rare tumour types due to issues such as poorer tissue suitability for molecular analysis, unclear results, and unfamiliar clinical and radiological patterns.

By gathering a large sample of these rare tumours and studying their clinical, radiological, and genetic profiles, we can better understand their unique diagnostic features. This could help develop models for risk and progression, leading to more personalized follow-up and treatment plans. It could also lay the groundwork for future studies aimed at improving patient outcomes.