National Institute of Technology Rourkela

Departmental Seminar

Seminar Title	: Differential expression of m6A RNA modifiers in gliomas.
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Venue	: LS Seminar Hall
Date and Time	: 07 Mar 2025 (17:00)
Abstract	: Glioblastoma is an aggressive brain tumour with poor prognosis. Recent findings suggest that RNA modifiers could be a determinant of oncogenicity and resistance phenotype. N6-methyladenosine RNA methylation is a dynamic modification enriched in the 3'UTR and determines the RNA fate. Studies have suggested that downregulating writers and erasers of m6A modifiers decreases oncogenicity. The present study will highlight m6A modifiers role in glioma. A total of 29 samples included in the study collected from SGPGIMS, Lucknow, UP and all were adult type diffusive glioma (Glioblastoma (n=12), Astrocytoma-IDH mutant (n=14) and Oligodendroglioma IDH mutant & 1p19q co-deleted (n=3)). According to WHO 2021 CNS tumor classification samples were grouped. We performed the qRT-PCR and western blotting for quantifying the different class of m6A RNA modifiers. The qRT PCR analysis showed a statistically significant differential expression of RBM15 (m6A writer) between Astrocytoma-IDH mutant, grade 4 and Oligodendroglioma-IDH mutant & 1p-19q co-deleted, grade 2 with a mean difference of ±3.55; ALKBH5 (m6A eraser) between Astrocytoma-IDH mutant, grade 3 and Oligodendroglioma-IDH mutant & 1p-19q co-deleted, grade 2 with a mean difference of ±28.9; and YTHDF3 (m6A reader) between Astrocytoma-IDH mutant, grade 4 and Astrocytoma-IDH mutant, grade 3 with a mean difference of ±0.51, and also between Glioblastoma and Astrocytoma-IDH mutant, grade 4 with a mean difference of ±0.42. The previous studies suggested that these RNA modifiers promote oncogenic properties of glioblastoma and other cancer. Further studies will be carried out to rule out the oncogenic properties of these RNA modifiers in glioma.