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OKN-007 is a new therapeutic approach for pediatric glioblastomas

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Pediatric glioblastomas (pGBM) are one of the leading causes of cancer-related deaths in children, with tumors essentially refractory to existing treatments. OKN-007 is a novel nitrone-based compound that has anti-cancer activity in both adult and pediatric GBM. Magnetic resonance imaging (MRI) techniques were used to assess the efficacy of OKN-007 in an orthotopic xenograft pGBM mouse (IC-3752GBM) model. OKN-007 was found to significantly decrease tumor volumes ($p<0.05$) and increase animal survival ($p<0.05$) in all OKN-007-treated mice compared to untreated animals, as well as increase diffusion ($p<0.01$) and perfusion rates ($p<0.05$). OKN-007 also significantly reduced lipid tumor metabolism [(Lip1.3 and Lip0.9)-to-creatine ratio ($p<0.05$)], as well as significantly decreased tumor cell proliferation ($p<0.05$) and microvessel density ($p<0.05$). Immunohistochemistry support data was also obtained for cell proliferation and tumor growth signaling. Furthermore, in relationship to the PDGFRα (platelet-derived growth factor receptor-α) pathway, OKN-007 was able to significantly decrease PDGFR-α ($p<0.05$) and SULF2 ($p<0.05$) immunoexpression, and significantly increase decorin expression ($p<0.05$). This study indicates that OKN-007 may be an effective anti-cancer agent for pediatric patients with pGBMs by inhibiting cell proliferation and angiogenesis, possibly via the PDGFRα pathway, and could be considered as an additional therapy for pediatric brain tumor patients.

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Pediatric diagnostic audiology testing in South Africa

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Recognizing the importance of early identification and intervention is gaining momentum in developing countries. There has also been recognition of the ethical obligation to ensure access to diagnostic and intervention services for all children identified with hearing loss. Series should be equitable regardless of geographic or socioeconomic status. Many screening initiatives have been developed in South Africa, but there are limited studies on diagnosis of pediatric hearing loss. Diagnostic audiology records of 230 children enrolled in an early intervention programme were analyzed to determine processes used for diagnosis of pediatric hearing loss in South Africa, across the private and public healthcare sectors as well as across geographic regions. There were differences in audiology practice across regions and healthcare sectors. A full comprehensive diagnostic evaluation was unlikely to be completed. Diagnostic services for children with hearing loss are an area that needs extensive research (especially in a developing world context). Studies are needed so as to determine factors that are preventing adherence to best practice diagnostic audiology guidelines.

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