ABSTRACT

J Neurooncol. 2022 Mar 10. doi: 10.1007/s11060-022-03972-2. Online ahead of print.

Compassionate use of Quantum Magnetic Resonance Therapy for treatment of children with Diffuse Brainstem Glioma in Mexico City: a single institutional experience.

Barragán-Pérez EJ(1), Alvarez-Amado DE(2), Dies-Suarez P(3), Tobón SH(3)(4), García-Beristain JC(1), Peñaloza-González JG(5).

Author information:

(1)Neurology Department, Hospital Infantil de México Federico Gómez, Mexico City, Mexico.

(2)Neurology Department, Hospital Infantil de México Federico Gómez, Mexico City, Mexico. alvarezamado@hotmail.com.

(3) Imagenology Department, Hospital Infantil de México Federico Gómez, Mexico City, Mexico.

(4) Department of Physics, Universidad Autónoma Metropolitana, Mexico City, Mexico.

(5)Oncology Department, Hospital Juarez de Mexico, Mexico City, Mexico.

PURPOSE: Diffuse Brainstem Glioma (DBG) is a catastrophic brain tumor with a survival rate of less than 10% two years after diagnosis despite the existence of different treatment protocols. Among the devices that use magnetic fields generated by Magnetic Resonance Imaging is Quantum Magnetic Resonance Therapy (QMRT).

METHODS: Five children diagnosed with DBG in our institution in Mexico City underwent treatment of compassionate use with QMRT between December 2018 and July 2019. A survival analysis was performed with previously reported historical data (n = 15).

RESULTS: Two patients (40%) survived after three years of follow-up; the log-rank test showed a statistically significant difference in overall survival between both groups (p = 0.032). All patients tolerated the treatment adequately without reporting any severe clinical or neuroradiological adverse effects. Of the patients included, all showed a decrease in the tumor one month after the end of the treatment, although there was great variability in the response and the difference was not statistically significant (p = 0.06).

CONCLUSIONS: Although future investigations are needed to confirm the findings reported in the present study, the improvement in survival is promising for a group of patients whose prognosis has been catastrophic over the years. Trial registration NCT03577600.

© 2022. The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature.

DOI: 10.1007/s11060-022-03972-2 PMID: 35266065