

# A 10 Year Retrospective Observational Study on The Utility and Prescription Standards of Dexamethasone in Pediatric Neuro-oncosurgery in a Tertiary Care Centre.

Anutra Chumbala Na Ayudhaya<sup>1</sup>, Scott Morrison<sup>2</sup>, Chadrasekaran Kaliaperumal<sup>2</sup>, and Pasquale Gallo<sup>2</sup>

<sup>1</sup>University of Edinburgh

<sup>2</sup>NHS Lothian

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## Abstract

**Object:** This study aimed to retrospectively assess dexamethasone utility in pediatric CNS tumor patients over a 10-year period, to better understand dosing variability, and highlight optimal practice. **Methods:** All pediatric CNS tumor cases managed operatively for a ten year period at a single center were reviewed. Information was gathered on demographics, dexamethasone doses, course durations, weaning regimes, PPI co-prescription, adverse events, and route of administration. Comparison within these groups was analyzed through use of statistical testing. **Results:** 127 patients received 193 dexamethasone courses. Median age was 7 years, with a median weight of 27.9kg. Most common tumor type was astrocytoma (24.8%). Median daily dose was 8mg, with twice daily dosing most common. Median course duration was 8 days,. Median weaning duration was 11.5 days. Daily dose was not correlated with patient weight and the median daily dose per kg was 0.2319mg/kg. Dexamethasone dose per kg was significantly inversely correlated with age. 44.9% of patients received intravenous dexamethasone only. 32.7% received oral dexamethasone only. 22.4% received multiple different routes of administration throughout their course. Intravenous dexamethasone was more commonly used in young age groups. Incidence of adverse effects was 14.5% with Cushing's syndrome most common. Dexamethasone dose per kg was not significantly different between patients with and without adverse effects; however, average dexamethasone course duration was significantly different between these groups. No relationship was noted between adverse effects incidence and administration route. 64.2% of patients received concurrent PPI with 35.8% receiving no PPI. **Conclusions:** Large variation was seen in practice, with prescriptions appearing based on clinician preference and symptom severity rather than patient age or weight. Dexamethasone administration route interestingly showed no relationship with incidence of adverse effects. Future guidelines should consider lower dose regimens with less frequent dosing as these may benefit quality of life.

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Running Title: 10 Year Assessment of Dexamethasone Use in Pediatric CNS Tumors

Anutra Chumbala Na Ayudhaya, BMedSci (Hons.),<sup>1</sup> Scott R. Morrison, MBChB, BMedSci (Hons.),<sup>2</sup> Chandrasekaran Kaliaperumal, MBBS, DipMedEd, FEBNS, FRCSI, FRCSEd (Neurosurgery),<sup>3</sup> Pasquale Gallo, MD.<sup>3</sup>

<sup>1</sup>Medical Student, The University of Edinburgh Medical School, Edinburgh, Scotland. <sup>2</sup>Foundation Trainee, NHS Lothian, Edinburgh, Scotland. <sup>3</sup>Consultant Adult and Pediatric Neurosurgeon, Department of Clinical Neuroscience, NHS Lothian, Edinburgh, Scotland.

Corresponding Author: Anutra Chumbala Na Ayudhaya, Medical Student, The University of Edinburgh Medical School, Edinburgh, Scotland.

Corresponding Author’s Email: S1609000@sms.ed.ac.uk

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