

NATIONAL UK GUIDELINES FOR MANAGING PITUITARY ADENOMAS IN CHILDREN AND YOUNG PEOPLE BELOW THE AGE OF 19 YEARS

DEVELOPED ACCORDING TO THE AGREE II FRAMEWORK

Joanne Blair¹, Márta Korbonits², Amy Ronaldson², Mary N Dang², Helen A Spoudeas³
on behalf of the Pituitary Adenoma Guideline Development Group

¹Alder Hey Children's NHS Foundation Trust, Liverpool, ²Queen Mary University of London & Barts Health NHS Foundation Trust, London, ³Great Ormond Street Hospital for Children NHS Foundation Trust, London, United Kingdom

Background

- Pituitary adenomas are usually benign tumours arising from the hormone-secreting cells of the anterior pituitary gland.
- In children and young people under 19 years (CYP), pituitary adenomas often secrete hormones in excess, resulting in characteristic syndromes, or cause mass effects causing, for example, visual disturbances and pituitary hormone deficiencies.
- CYP are more likely to have a genetic predisposition and a more aggressive phenotype than adult patients

Aim

- To create a high-quality, evidence-based guideline for the diagnosis, assessment, and management of pituitary adenomas in CYP with the aim of providing national standard of best practice.

Methods

- The interdisciplinary Guideline Development Group (GDG) identified 155 clinical questions which were reviewed by stakeholders and used to direct a systematic literature search (1990 – September 2016).
- Evidence was appraised using the GRADE approach. Where necessary, evidence from the adult literature was used and downgraded accordingly.
- If there was sufficient evidence the GDG made a guideline recommendation. Where high quality evidence was lacking, recommendations were drafted based on expert opinion, which were reviewed by two rounds of a Delphi consensus process (>70% consensus required)

Results

- 54 recommendations were based on identified evidence. A further 57 recommendations were reviewed by two rounds of Delphi consensus process. In total, 111 recommendations were made relating to the following areas: (1) General Statements; (2) Radiology; (3) Visual Assessment; (4) Histopathology; (5) Surgery; (6) Radiotherapy; (7) Genetics (8) Prolactinomas; (9) Cushing's Disease; (10) GH Excess – Gigantism and Acromegaly; (11) TSHomas; (12) Non-functioning pituitary adenomas;
- The 15 General Statements of the guideline are shown below.

Recommendation	Strength	Delphi %
In most situations, the referral of a suspected pituitary adenoma in CYP should be to a paediatric endocrinologist with experience in the management of pituitary adenomas to lead and coordinate timely clinical care in collaboration with the designated neuro-oncology service	Strong	90%
CYP with suspected or confirmed pituitary adenomas should be managed in a specialist age-appropriate endocrine and neuro-oncology centre by a multidisciplinary team (MDT) working collaboratively with appropriate local healthcare professionals	Strong	100%
The paediatric neuro-oncology MDT does not adequately meet criteria for pituitary-specific services	Strong	100%
An appropriate MDT will be expected to include, as core members, a paediatric endocrinologist and pituitary surgeon with paediatric experience, as well as an adult endocrinologist, neuroradiologist, neuropathologist, radiotherapist and clinical nurse specialist all with pituitary expertise	Strong	100%
Key specialists from neuro-ophthalmology, neuropsychology, neuro-oncology, and clinical genetics should be available as co-opted members of the MDT	Strong	100%
Clinicians treating CYP with pituitary adenomas should have access to a national pituitary-specific advisory panel, to discuss the management of complex cases	Strong	90%
Baseline assessment for pituitary hormone deficiencies and specific investigations for hormone excess should be coordinated and interpreted by a paediatric endocrinologist with expertise in pituitary disorders at the specialist centre	Strong	100%
Pituitary hormone replacement therapy should be managed by the paediatric endocrinologist.	Strong	100%
In CYP having pituitary surgery, peri- and post-operative hydrocortisone cover should be considered, until reassessment of the HPA axis at a later stage, even in those who do not have pre-existing ACTH deficiency	Moderate	71%
Endoscopic or microscopic transsphenoidal surgery should be undertaken in the age-appropriate specialist setting by a surgical team with specific training in paediatric and adult pituitary surgery	Strong	95%

Recommendation	Strength	Delphi %
CYP with a confirmed adenoma should be reported to an appropriate national registry	Strong	90%
At completion of growth and puberty, CYP treated for pituitary adenomas should be transferred to adult pituitary services for continued follow-up	Strong	89%
Patients with stable disease should have lifelong annual assessment of clinical and biochemical parameters	Strong	88%
Consideration may be given to the assessment of bone mineral density prior to transition to adult services if there are on-going significant risk factors for bone fragility	Moderate	86%
In CYP with pituitary adenomas, diagnostic genetic counselling and testing should be routinely offered to inform management and aid surveillance of family members	Strong	100%

Conclusions

A high-quality guideline for the diagnosis, assessment, and management of pituitary adenomas in CYP based on clinical evidence and experience has now been developed according to the AGREE II framework. The guideline should facilitate improved clinical care and outcomes in CYP with pituitary adenomas

ACKNOWLEDGEMENTS

Contribution of colleagues participating in the Delphi process
Guideline methodology support from the Royal College of Paediatrics and Child Health
Unrestricted financial support from Sandoz, The Pituitary Foundation, Association for Multiple Endocrine Neoplasia Disorders, Surviving Childhood Cancer – Empowerment, Surveillance and Support, Society of British Neurological Surgeons