

Aims Fluid challenges are a common tool used in A and E to aid decision-making. As they can often prove time-consuming, we aimed to assess whether they impacted on the 4 hour breach target at a busy district general hospital (DGH) paediatric A and E, and whether their use was always indicated.

Methods We analysed all 4 hour breaches at a busy DGH paediatric A and E over a 24 day period in December 2016. We attempted to identify those breaches which followed an oral fluid challenge initiated by medical staff and documented in the A and E notes. We then assessed whether this cohort of patients showed the following objective signs of dehydration on presentation (from NICE guidelines): tachycardia, tachypnea, decreased skin turgor and decreased urine output. We conducted a literature search to identify evidence supporting the use of fluid challenges.

Results Of 294 breaches, 36 (12.1%) cases involved fluid challenges. Of these, 86% were discharged home.

Half of the children who breached awaiting completion of a fluid challenge had no objective signs of dehydration recorded on presentation. A further third recorded only tachycardia, although many of these were febrile.

Of those with no recorded signs of dehydration, 11% were admitted to the paediatric assessment unit for ongoing observation.

Of the 5 patients admitted, two had 2 or more signs of dehydration whilst 2 exhibited no characteristic symptoms.

Our literature search revealed no high quality evidence for the use of fluid challenges as a reliable diagnostic aid.

Conclusion Fluid challenges were implicated in a significant proportion of all paediatric breaches, half of which recorded no core objective signs of dehydration on presentation. We would therefore suggest this cohort did not require a fluid challenge yet accounted for over 6% of all departmental breaches. No strong evidence supports their use.

We advocate a more judicious use of fluid challenges limited to the small proportion of children showing objective signs of mild or moderate dehydration at presentation where their use may provide greater decision-making power. This may help reduce breaches at the busiest time of year.

A larger scale study would provide with more information to further our conclusions.

We evaluated whether our patients with BNHL with residual radiological abnormalities received follow-up imaging and biopsies, and how these investigations affected clinical outcomes.

Design/methods Data was collected for all children diagnosed with BNHL between 2006–2017 at a UK tertiary paediatric oncology centre. Measures included patient age at diagnosis, gender, histology, MYC status, and bone marrow or CNS involvement. Chemotherapy courses were recorded, including escalation of treatment from Group B to C. Follow-up imaging and clinic letters were analysed, with residual disease being categorised according to formal radiology reports.

Results 66 children aged 1 to 11 years were diagnosed with BNHL in the period studied; 57 males (86%) and 9 females (14%). 14 children had bone marrow positivity (21%), and 8 children CNS positivity (12%). 41 children (62%) had MYC positivity.

At end of treatment, 28 children (42%) did have abnormal radiological findings; 4 of them underwent biopsy to exclude active disease. None of the children undergoing follow up imaging demonstrated disease relapse. Some children received multiple repeat scans involving either significant radiation exposure or general anaesthetic risk without altering outcomes. Overall survival was 94% (n=62), with 4 deaths.

Of 4 deaths:

- 2 had good COP response on initial imaging but relapsed on treatment,
- 1 had stable residual disease on scans but died of secondary AML post BMT
- 1 did not respond to chemotherapy with clear progression of disease on imaging and palliation.

Conclusions Children with BNHL have good outcomes with intensive chemotherapy treatment. None of our patients with residual imaging abnormalities at treatment completion had disease relapse or progression, questioning the clinical need for longterm imaging, particularly if involving radiation. Biopsy provided reassurance without altering patient management. A protocol addition should be developed to guide follow up imaging where residual imaging abnormalities exist at end of treatment.

British Society for Haematology and Children's Cancer and Leukaemia Group

G355 TO IMAGE OR NOT TO IMAGE? B CELL NON-HODGKINS LYMPHOMA (BNHL) AND RESIDUAL TISSUE ON SCAN AT DISEASE REASSESSMENT IN CHILDREN UNDER 12

K Green, D Cheng. Paediatric Haematology, Great Ormond Street Hospital, London, UK

10.1136/archdischild-2018-rcpch.345

Background/objectives Children with BNHL have good outcomes with intensive upfront chemotherapy. Disease relapse or progression, whilst rare, is associated with very poor outcome hence the proven need for early disease assessment and escalation of chemotherapy if lacking a radiological early-treatment response. The value of post-treatment imaging surveillance or biopsy in children with residual imaging abnormalities in detecting and preventing disease relapse/progression is unclear.

G356 DECISION MAKING MANAGEMENT GUIDELINE FOR PATIENTS (<19 Y) WITH IDIOPATHIC THICKENED PITUITARY STALK AND/OR IDIOPATHIC CENTRAL DIABETES INSIPIDUS

¹M Cerbone, ²J Visser, ³C Bulwer, ¹A Ederies, ⁴I Kamali, ⁵A Grossman, ⁶M Korbonits, ¹HA Spoudeas. ¹Paediatric endocrinology, Great Ormond Street Hospital, London, UK; ²Oncology, Cambridge University Hospitals, Cambridge, UK; ³Paediatrics, Whittington Hospital, London, UK; ⁴Neurosurgery, Royal Manchester Children's Hospital, Manchester, UK; ⁵Endocrinology, Oxford University, Oxford, UK; ⁶Endocrinology, Queen Mary University of London, London, UK

10.1136/archdischild-2018-rcpch.346

Aim To develop a guideline for the investigation and management of children and young people up to the age of 19 years with idiopathic thickened pituitary stalk (iTPS) and/or central diabetes insipidus (iCDI) where the aetiology is not apparent at presentation.

Methods The guideline development group (GDG) identified the objectives and the clinical questions which needed to be addressed. These were reviewed by guideline stakeholders and

used to direct a systematic literature search. Published evidence was appraised using the GRADE system. Where the literature search identified sufficient evidence, the GDG made a guideline recommendation. Where there was insufficient evidence, the GDG drafted recommendations based on their expert opinion and reviewed these using a formal Delphi consensus process. This was a joint society (BSPED/CCLG) multidisciplinary national endeavour done to NICE methodology and overseen by RCPCH.

Results The literature search identified 568 articles covering the period Jan 1990 –March 2017. The most commonly reported causes of iTPS and iCDI in children are Langerhans Cell Histiocytosis (LCH), Germ Cell Tumours (GCT) and craniopharyngioma (CP). The average prevalence of LCH, GCT and CP in 11 case series (including 741 patients) is 16%, 13% and 12%, respectively. Overall, congenital defects are responsible for 19% of the iTPS/iCDI cases, whilst infectious diseases (2%), trauma (1%) and inflammatory/autoimmune conditions (1%) rarely occur in children. In 29% of the cases no aetiology is identified. Causes of pituitary stalk lesions in adults, metastatic tumours and neurosarcoidosis, do not form part of the differential diagnosis in children. What constitutes a TPS is not consistently defined across studies. High quality evidence was lacking for the majority of the clinical questions and two rounds of Delphi consensus were undertaken. A decision-making flowchart has been developed and will accompany the guideline.

Conclusion The likely aetiology of iTPS and iCDI in children differs from that in adults and justifies the development of age appropriate decision making management guidelines to inform best practice nationally. This will form the basis for future audits of practice and outcomes and is intended to improve the quality of care of children and young people with iTPS and iCDI.

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NATIONAL UK GUIDELINES FOR THE INVESTIGATION, TREATMENT AND LONG-TERM FOLLOW-UP OF PAEDIATRIC CRANIOPHARYNGIOMA

^{1,2}HW Gan, ³P Morillon, ⁴C Mallucci, ⁵A Gamble, ⁶S Wilne, ⁷B Harrison, ²H Spoudeas. ¹Genetics and Genomic Medicine Programme, University College London Great Ormond Street Institute of Child Health, London, UK; ²Department of Paediatric Endocrinology, Great Ormond Street Hospital for Children NHS Foundation Trust, London, UK; ³Department of Emergency Medicine, Kingston Hospital NHS Foundation Trust, London, UK; ⁴Department of Paediatric Neurosurgery, Alder Hey Children's NHS Foundation Trust, Liverpool, UK; ⁵Children's Cancer and Leukaemia Group, Leicester, UK; ⁶Nottingham Children's Hospital, Nottingham University Hospitals NHS Trust, Nottingham, UK; ⁷Department of Endocrine Surgery, Sheffield Teaching Hospitals NHS Foundation Trust, Sheffield, UK

10.1136/archdischild-2018-rcpch.347

Aims Although rare, craniopharyngiomas are the commonest suprasellar tumour in childhood. Despite high overall survival, children and young people <19 years with craniopharyngiomas are at risk of multiple relapses and long-term tumour- and treatment-related neuroendocrine, cognitive and visual morbidity. We sought to provide, for the first time, a national standard for best practice based on currently available evidence for the assessment, treatment and follow-up of paediatric craniopharyngiomas under the auspices of the RCPCH, UK Children's Cancer and Leukaemia Group (CCLG) and the British Society for Paediatric Endocrinology and Diabetes (BSPED).

Methods Clinical questions were formulated based on a PICO (Population, Intervention, Comparison, Outcome) format by a

multidisciplinary Guideline Development Group. Systematic searches were conducted via the Ovid MEDLINE (1946-February 2017) and Cochrane Library (2016, Issue 12) databases, identifying 2023 separate research articles. Publications underwent a three-tier filtering process and 300 were reviewed using the GRADE approach. Where recommendations could not be made, a two-stage international Delphi consensus process was conducted.

Results 44 clinical questions were identified, leading to 35 recommendations largely based on low to very low quality evidence. 30 further recommendations achieved >70% agreement via the Delphi consensus process. Important highlights include the recommendation that craniopharyngiomas are managed in tertiary paediatric centres with sufficient neuro-oncology, neurosurgery, endocrinology, radiology, pathology and neuropsychology multidisciplinary experience. At diagnosis, tumours should be graded using the 'Paris' grading system and subsequent surgical treatment tailored to avoid hypothalamic damage, with adjuvant upfront radiotherapy being offered where tumour resection is incomplete. Detailed recommendations on the neuroendocrine, ophthalmological and psychological pre-treatment assessment of patients and long-term follow-up of survivors are also made, with a review on the safety of growth hormone replacement therapy in this cohort.

Conclusions These guidelines provide the first evidence- and consensus-based national recommendations for the management of paediatric craniopharyngioma, and highlight the need for further research in areas such as the efficacy of proton beam therapy, radiosurgery and intracystic therapies in children, and the management of late effects such as hypothalamic obesity. Through their implementation, we hope to achieve better consistency in the quality of care of such patients and improve long-term quality of survival.

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MENTAL HEALTH NEEDS OF LONG TERM SURVIVORS OF CHILDHOOD AND YOUNG ADULT CANCER

^{1,2,3}AJ Friend, ^{1,3,4}AW Glaser, ^{2,4}RG Feltbower. ¹Leeds Institute of Cancer and Pathology, University of Leeds, Leeds, UK; ²Division of Epidemiology and Biostatistics, University of Leeds, Leeds, UK; ³Department of Paediatric Oncology, Leeds Children's Hospital, Leeds, UK; ⁴Leeds Institute of Data Analytics, University of Leeds, Leeds, UK

10.1136/archdischild-2018-rcpch.348

Background/objectives Survivors of children's and young people's cancer are known to have an increased risk of cognitive difficulties compared to the general population, however less is known about emotional and behavioural problems. A recent systematic review highlighted the lack of consensus regarding the psychiatric needs of these patients. We aimed to further explore the prevalence of psychiatric disorder in long-term survivors of children's and young people's cancer.

Methods Cancer registration records from a regional population-based registry of children's and young people's cancer in Yorkshire were electronically linked with the Hospital Episode Statistics Mental Health and Learning Disabilities Data Set (MHLDDS) covering all admissions in England between 2005 and 2016. The analysis was limited to those aged 0–29 years at diagnosis between 1974 and 2012; we excluded those diagnosed less than 5 years ago to ensure that patients who required psychological support during their acute treatment were not included.

Results We had registry data for 8092 patients who had survived a minimum of 5 years following a diagnosis of