

Use of an index to assess need for sedation and general anaesthesia in children

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Introduction

Dental caries management

- most common reason for general anaesthesia in children under 19
- 42,000 children admitted to hospital in 2014-2015 (NHS England 2016)
- £30 million spent on hospital based extractions in under 18s in 2012/13

Current guidelines for paediatric sedation and general anaesthesia(GA) in children

- Guideline for the use of General Anaesthetic in Paediatric Dentistry: Davies C, Harrison M, Roberts G. Royal College of Surgeons England: May 2008
- NICE guidelines [CG112]: Sedation in under 19s: using sedation for diagnostic and therapeutic procedures: December 2010
- Guidelines for the Management of Children Referred for Dental Extractions under General Anaesthesia, Association of Paediatric Anaesthetists of Great Britain and Ireland: 2011.
- Standards for Conscious Sedation in the Provision of Dental Care: The Dental Faculties of the Royal Colleges of Surgeons and the Royal College of Anaesthetists Report of the Intercollegiate Advisory Committee for Sedation in Dentistry: April 2015

Prior to sedation or GA clinician needs to assess:

- Medical status
- Anxiety
- Behaviour and co-operation
- Treatment requirements
- Consider suitability of alternative treatment modalities

Often carried out using clinical judgement

No objective means of assessment

Aim of research project:

Literature review using GRADE to assess whether the use of an assessment index to assess patient need for sedation or GA will improve outcomes compared to other means of assessment

- Population: children under 18 years
- Intervention: use of an index
- Comparison: no index
- Outcome: successful completion of treatment

Use of index to assess need for sedation or GA

Literature Search:

Method

- Literature search on Medline and other databases using variety of search terms
- Papers directly addressing PICO question selected
- Analysed using GRADE PRO software

Results

- 4 papers found linked to the Indicator of Sedation Need (IOSN) tool for adults developed by Coulthard et al 2011
- 1 paper relating to IOSN for children

The Indicator of Sedation Need(IOSN) for adults

Coulthard et al, 2011

Three Components:

1. Anxiety component -result converted to a score 1-4
 2. Medical and behavioural component - scored 1-4
 3. Treatment complexity score - scored 1-4
- **Scores are totalled to an IOSN score which can range from 3 to 12**
 - **Sedation need increases with score**

Study outcomes: Indicator of Sedation Need

3 papers found IOSN to be effective in predicting sedation need

Goodwin et al 2012

Liu et al 2013

Yuan et al 2015

1 paper found no benefit to using IOSN

Gerrard 2016

Use of IOSN in children

Madouh and Tahmassebi 2016 - Paediatric IOSN:

- Study in which IOSN adapted for use in children
- Used children's anxiety assessment questionnaires and treatment list specific to children
- Medical component not modified
- No benefit in using p-IOSN was found compared to standard methods
- Demonstrates easy modification and application for children

Recommendations

- There is evidence for use of objective measurements of patient need for sedation and general anaesthesia
- There is evidence for combining indicators to give a measure of sedation/GA need
- Further research needed into use of an adapted IOSN for children incorporating anxiety, treatment complexity, medical and behavioural components

The end

Thank you

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