

Other journals in brief

A selection of abstracts of clinically relevant papers from other journals.
The abstracts on this page have been chosen and edited by Paul Hellyer.

Carious deciduous teeth: best practice

Innes N P, Clarkson J E, Douglas G V A *et al.* Child caries management: a randomised controlled trial in dental practice. *J Dent Res* 2019; DOI: 10.1177/0022034519888882.

Little difference between prevention, Hall technique and restoration.

In the research-naïve environment of general dental practice trials are rare but important for their relevance to the realities of life in primary care. There is continuing uncertainty about the best way to treat dental caries in children. This study recruited 72 dental practices across England, Scotland and Wales and the researchers provided training in clinical procedures, research methods and data collection. Practitioners were requested to recruit into the study children aged between 3 to 7 years, who had at least one carious lesion into dentine. Over a 32-month period, 7,699 children were screened, of whom 1,144 (15%) had a carious lesion. Those with lesions were randomly assigned within each practice to one of three treatment protocols:

1. Best practice prevention alone (PA) – diet and toothbrushing advice, topical fluoride application and fissure sealants to permanent teeth
2. PA + removal of carious tissue under local anaesthetic and placement of a conventional restoration (C+P)
3. PA + sealing in the caries with an adhesive restoration or a preformed metal crown (B+P).

Over a median follow up period of 33 months, the incidence of dental pain or infection per child in each group was PA – 161 out of 354 (45%), C+P – 148/352 (42%) and B+P – 141/352 (40%). The authors conclude that there is no evidence of a difference between the three treatment approaches for the number of episodes of dental pain or infection experienced by this high-risk group.

The problems of carrying out research within primary care are highlighted, such as research fatigue due to the length of time taken for the study, requiring ‘high levels of motivational input’ to collect final data and verify questionable or missing data. The higher than anticipated incidence of dental pain observed in a developed country with ‘comprehensive dental services’ are of concern.

All three strategies were generally acceptable to all participants (practitioners, children and parents) with PA being the least costly, but least effective. The other strategies have greater cost implications and judgements are required to decide what value should be placed on the avoidance of dental pain. The importance of primary prevention to avoid dental caries all together, rather than managing multiple lesions, is highlighted.

The importance of trust in practitioners to make decisions in the best interest of the child is stressed but the paper ends by stating the practitioners ‘willingness and abilities to deliver effective strategies and individual items of care’ need to be considered in implementing policy change.

<https://doi.org/10.1038/s41415-020-1201-y>

GA is neurotoxic in children?

McCann M E, Soriano S G. Does general anaesthesia affect neurodevelopment in infants and children? *BMJ* 2019; DOI:10.1136/bmj.16459.

Evidence is unclear but frequency and duration should be limited.

The Food and Drug Administration (FDA) in the United States recently required warning labels to be put on all anaesthetic agents, that their use may result in developmental problems in children under 3.

This paper reviews the literature for evidence of the possibility of anaesthetic induced neurotoxicity in children. Animal studies suggest that exposure to anaesthetics causes some impairments in memory, emotional behaviours and motor function, among others. However, the relevance of these findings to humans is not clear.

Outcome measures for assessing development include academic performance, interventions for behavioural issues and the results of individual neuropsychological testing. Overall the authors conclude that the risk of anaesthetic neurotoxicity in routine surgical procedures in early life is negligible. Certainly, there is no indication to withhold anaesthesia where the benefit of the procedure is clear.

Limiting both anaesthetic duration and repeat procedures is important because the most vulnerable period for children is not known.

<https://doi.org/10.1038/s41415-020-1263-x>

Carious first molars: best practice

Taylor G D, Vernazza C R, Abdulmohsen B. Success of endodontic management of compromised first molars in children: a systematic review. *Int J Paediatr Dent* 2019; DOI:10.1111/ipd.12599.

Pulpotomy preferable to pulpectomy

The UK Child Dental Health survey of 2013 showed that compromised first molars (cFPM) affect 25% of children. Management of these teeth is under researched. General dental practitioners have a tendency to restore these teeth whereas specialists in paediatric dentistry prefer to extract. Factors influencing the decision include patient co-operation, parental attitudes, pulpal or peri-radicular diagnoses, restorability and present or future orthodontic considerations.

Endodontic management may be required for cFPM if the restorative option is chosen and options include pulpotomy, pulpectomy, apexification and regenerative techniques, all of which have been shown to be successful in adults. For children, however, the research around these options is sparse and often of poor quality. Eleven papers were included in this review and the results must be interpreted with caution. However, the authors suggest that partial and coronal pulpotomies may be useful techniques. Pulpectomy in children is probably not the treatment of choice, and extraction may be preferred in these cases.

<https://doi.org/10.1038/s41415-020-1262-y>