

What is the impact on families of children having dental treatment under general anaesthetic?

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A Commentary on

Park J S, Anthonappa R P, King N M, McGrath C P.

The family impact of dental general anaesthesia in children: A meta-analysis. *Int J Paediatr Dent* 2018; DOI: 10.1111/ipd.12452. [Epub ahead of print] PubMed PMID: 30468690.

Abstract

Data sources PubMed, Medline, CINAHL, Cochrane Library, and Web of Science databases.

Study selection Studies involving patients aged between 0–16 years of age having dental general anaesthetic (DGA), where Early Childhood Oral Health Impact Scale (ECOHIS) and Child Oral Health-Related Quality of Life (COHRQoL) pre- and post-operative assessments were made, were considered.

Data extraction and synthesis The quality of studies was assessed by two reviewers using the Newcastle-Ottawa Scale for cohort studies. Information on study design and instruments used to record family impact scale (FIS) were extracted. The main outcome was changes in the FIS section presented as mean difference (MD).

Results After an initial search of 105 studies in the database, 21 articles were included in the analysis. A positive outcome in the FIS changes was identified in all studies. The combined MD for FIS using ECOHIS and COHRQoL was 1.52 (95% CI 1.15–1.89; $P < 0.00001$; $I^2 = 87\%$) and 1.10 (95% CI 0.68–1.52; $P < 0.00001$; $I^2 = 79\%$), respectively.

Conclusions Dental treatment with general anaesthesia for children had a significant positive impact on parental emotions, activity, and conflict. Following DGA, there was significant improvement in the FIS, with large MD.

Commentary

The 2013 Children's Dental Health Survey found that 31% of five-year-olds and 46% of 8-year-olds had obvious dental caries, the majority of which was untreated.¹ For five-year-olds with decay, the average number of teeth affected was three.¹ Dental caries requires treatment and for a number of patients, particularly young patients with multiple carious teeth requiring extraction, this is only possible under general anaesthetic (GA). In a one-year period in the UK, 43,700 children were admitted to hospital with caries for which the majority required extractions under GA.^{2,3} Dental caries itself has an impact on children,^{4,5} including pain and sepsis which may affect eating and sleeping, lead to missed school days and carries a treatment burden.⁴

Practice point

While the need to prevent caries is paramount, this review demonstrated that GA for dental treatment can have a positive impact on family life.

This systematic review aimed to establish whether GA for dental treatment had an influence on familial quality of life. The review was the first of its kind to synthesise data from studies that used a Family Impact Scale (FIS) separately to assessing children's oral health-related quality of life (OHRQoL). The review included 21 studies which used a FIS for families of children pre- and post-dental general anaesthetic (DGA). The participants in the included studies varied in terms of the reasons for the DGAs and the dental treatment carried out. The majority of patients were medically well, with only one study including children with disability.

All of the included studies were non-randomised and had follow-up periods ranging from one to 48 weeks. The risk of bias was determined using the Newcastle-Ottawa Quality Assessment Scale for cohort studies, with a moderate to high risk of bias found. The included studies used one of two different FISs. The FIS of the Early Childhood Oral Health Impact Scale (ECOHIS) has two domains (parental emotions and family activity) and the FIS of the Child Oral Health-Related Quality of Life measure (COHRQoL) has three domains (family activity, parental emotions, and family conflict). Consequently, two different meta-analyses were conducted to give two separate mean difference scores for FIS. However, the measures were implemented in different ways (self-administered, face-to-face, structured, telephone, postage, in clinic or in combination) and at different time periods relative to the GA itself. The results found a mean difference of 1.21 (CI 0.52–1.89) for the ECOHIS FIS and 0.64 (CI 0.39–0.88) for the COHRQoL FIS, both results were statistically significant, however the results were fairly imprecise with wide confidence intervals.

This review shows that a GA for dental treatment reduces the family impact of children's oral health. The findings of this review have implications for how children with multiple carious lesions are managed and treatment decisions are made by clinicians and parents.⁶ While the overall aim must be to reduce caries experience and thus those in need of treatment, caries experience persists in the UK and, therefore, effective treatments with positive impact on the child and their families must be available. While some parents may worry about adverse effects of the GA and peri-operative period, this systematic review shows that GA for dental treatment can have a positive impact on family life.

GRADE rating



References

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Evidence-Based Dentistry (2019) **20**, 48-49. doi: 10.1038/s41432-019-0025-6