

Peer Review File

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Reviewer A:

The article collected and analyzed 1409 participants and analyzed the serum ferritin and transferrin saturation of some patients. The study found that compared with the general population, the prevalence of iron deficiency in children with enlarged tonsils was significantly higher. The negative effects of iron deficiency will have a lasting effect in the development process, and continue into adulthood, and need to be resolved by appropriate iron supplements. Studies have found that among children with hypertrophy of the tonsils, iron deficiency appears to be more common in the younger age group of 2-6 years. The article also pointed out that the role of iron in the pathophysiology of tonsillar hypertrophy and the benefits of treatment should be further clarified.

Reply 1: Thank you for your time in reviewing our paper. While treatment of iron deficiency and the benefits of iron supplementation in our population is beyond the scope of this study, we have further clarified the need and benefits of treatment.

Changes in text: Background lines 118-133 and Discussion lines 305-316.

Reviewer B:

This paper examines the relationship between SBD, tonsillitis and iron deficiency in Australian paediatric population. This is the second only paper showing iron deficiency in children with tonsillitis or SBD undergoing adenotonsillectomy and is far larger than the previously published paper. It explores this relationship and possible causative factors.

The lack of a matched cohort for age however raises the question as to the validity of the results. There is actually very little data looking at normative data for children in Australia in relationship to Hgb or iron levels.

Reply 2: Thank you for your time in reviewing our paper. We agree that this is the greatest limitation of our study given the design being a point-prevalence non-randomised study. Nevertheless, we have made a strong effort to better clarify the baseline prevalence of the general Australian/New Zealand paediatric population to act as a comparator for our study population.

Methods:

Is this a prospective or retrospective study? Where the patients enrolled at initial contact and booking for surgery - was there consent to be part of this study?

Reply 3: Retrospective study. HREC provided a waiver of consent.

Changes in text: line 153 "This study was a retrospective point prevalence cohort study across two centres.."

Discussion:

Line 236 - what is the rate of iron deficiency in this population? Given that this is not matched with a population not undergoing adenotonsillotomy surgery or without tonsillitis or SDB, raises the possibility of this just being an association not cause and affect. The 8% anaemia rate is based on data from a WHO paper from 1993-2005 - there is no reference within this original publication as to where this is sourced from and the WHO paper bases this on regression estimates.

Reply 4: The issue of correlation versus causation has been discussed in section 1.4 under limitations. Nevertheless, several changes have been now incorporated that discuss the rate of iron deficiency in this population. (see replies to below comments)

Changes to text: line 121 “with the World Health Organisation estimating a prevalence of 8%”

The RCPA states the true incidence of iron deficiency in children in Australia isn't actually known - <https://www.rcpa.edu.au/Library/College-Policies/Position-Statements/The-Use-of-Iron-Studies,-Ferritin-and-Other-Tests>

Changes to text: line 262-272

Given that there is a higher rate of anaemia in aboriginal population, Indigenous status would have been useful. High rates have been Identified in pregnant aboriginal women - <https://www.health.gov.au/resources/pregnancy-care-guidelines/part-f-routine-maternal-health-tests/anaemia>.

Changes to text line 333-335

This paper also shows higher than 8% anaemia in Darwin hospital paediatric population - 30% non aboriginal and 40% aboriginal.

Ritchie B, McNeil Y, Brewster DR. Soluble transferrin receptor in Aboriginal children with a high prevalence of iron deficiency and infection. Trop Med Int Health. 2004 Jan;9(1):96-105. doi: 10.1046/j.1365-3156.2003.01158.x. PMID: 14728613.

Changes to text: line 262-272

This NZ paper showed 30% of children admitted to starship were iron deficient - Wilson C, Grant CC, Wall CR. Iron deficiency anaemia and adverse dietary habits in hospitalised children. N Z Med J. 1999 Jun 11;112(1089):203-6. PMID: 10414620.

These papers raise the possibility that iron deficiency is higher than that quoted by WHO data of 8%.

Changes to text line 262-272

Might be worth looking at gender as well, iron deficiency is more common in teenage girls and this NZ paper explores this -

Schaaf D, Scragg R, Metcalf P, Grant C, Buchanan J. Prevalence of iron deficiency in

Auckland high school students. N Z Med J. 2000 Aug 25;113(1116):347-50. PMID: 11130366.

This paper also looks at ethnicity.

Changes to text: 333-335.

This is the biggest limitation in this paper and needs discussion. If the authors could identify a matched cohort this would add greatly to this paper.