Letter to the Editor with Reference to “How to Intervene in the Caries Process: Early Childhood Caries – A Systematic Review”

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Dear Editor,

We read with much interest the recent publication by Schmoekel et al., “How to Intervene in the Caries Process: Early Childhood Caries – A Systematic Review” published in the August 2020 issue of *Caries Research*. The aim of this systematic review was to systematically evaluate the current state of knowledge on how to intervene in a carious process in carious primary anterior teeth with ECC. We appreciate the efforts of the authors to comprehensively bring all the data on the management of carious primary anterior teeth in one paper, however, we do wish to share a few observations.

Firstly, the article has about 6 systematic reviews, 12 randomized clinical trials (RCT), 5 cohort studies and 1 clinical study included. Due to the inclusion of all types of study designs, including systematic reviews, it would be appropriate to address this review paper as a scoping review than as a systematic review. The quality assessment of the randomized clinical trial, cohort studies and clinical study was done using the New Castle Ottawa Scale, which is primarily a scale to assess the quality of only non-randomized studies, and the same has been stated in the article under the section “Quality Assessment and Assessment of Heterogeneity” – “Due to the

diversity of the study types, the quality assessment for the nonoperative and operative management of ECC was performed (C.H.S. and J.S.) according to the Newcastle-Ottawa Scale (online suppl. Tables 2 and 3), which is primarily aiming at assessing the quality of nonrandomized studies [Wells et al., 2016]” (page 4). The supplementary material also shows that the authors have used the PRISMA checklist to perform quality assessment for the included systematic reviews. In this context, we recommend the usage of appropriate quality assessment tools for the included systematic review and RCTs as mentioned in the article by Ma et al. [2020]. This would have given us more reliable information on the quality of the included studies. Also, the reference [Wells, 2016] (page 4) is not in the reference list.

We also noticed that the article by Gao et al. [2016] included in this systematic review presented in Table 2 (page 5) has 10 RCTs that investigate the remineralizing effect on ECC using different fluorides. Of the 10 RCTs, only 2 RCTs are performed on primary teeth and all the rest are performed on permanent teeth. Also, in the main results/ outcome column (page 5) of the present review, the authors have reported the results of the meta-analysis performed in the Gao et al. [2016] study which includes

results of 2 RCTs performed on permanent teeth. Considering the exclusion of permanent teeth in the present systematic review as stated in page 2 in the present article, we would use caution in drawing the outcome from the article by Gao et al. [2016] and also question the inclusion of this article into the present systematic review.

Peretz et al. [2006] is one of the included cohort studies for the non-operative caries management (NOCM) of ECC (page 6). However, to our knowledge, proximal slicing was performed in that cohort study for some teeth which makes it a non-restorative/non-operative cavity treatment according to the article Machiulskiene et al. [2020]. Hence, we doubt the inclusion of this study under this NOCM category of the present systematic review. Additionally, regarding the excluded studies and included studies in the flow chart (page 3), it is 24 studies and not 17 studies that are excluded and it is 11 included studies in the “non operative management of ECC using other options than SDF to arrest caries” and not 10. The article by Contreras et al. [2017] presented in Table 1 (page 4) has 7 RCTs and not 8 RCTs. The following sentence

“SDF solution applied once or twice a year could arrest active caries lesions involving dentine with a success rate of 79 and 91%, respectively [Duangthip et al., 2015],” (page 8) in the Results section under silver diamine fluoride is originally the result of the article by Zhi et al. [2012] which is one of the included studies in the systematic review by Duangthip et al. [2015]. We suggest that the authors consider changing the reference to address the statement more specifically.

Yours sincerely

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Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Author Contributions

Bhavyaa R, Sujitha P, and Muthu MS wrote the letter to the editor, critically revised it and approved the submitted version.

References

- Duangthip D, Jiang M, Chu CH, Lo EC. Non-surgical treatment of dentin caries in preschool children—systematic review. *BMC Oral Health*. 2015 Apr;15(1):44.
- Gao SS, Zhang S, Mei ML, Lo EC, Chu CH. Caries remineralisation and arresting effect in children by professionally applied fluoride treatment - a systematic review. *BMC Oral Health*. 2016 Feb;16(1):12.
- Ma LL, Wang YY, Yang ZH, Huang D, Weng H, Zeng XT. Methodological quality (risk of bias) assessment tools for primary and secondary medical studies: what are they and which is better? *Mil Med Res*. 2020 Feb;7(1):7.
- Machiulskiene V, Campus G, Carvalho JC, Dige I, Ekstrand KR, Jablonski-Momeni A, et al. Terminology of Dental Caries and Dental Caries Management: Consensus Report of a Workshop Organized by ORCA and Cariology Research Group of IADR. *Caries Res*. 2020;54(1):7–14.
- Peretz B, Gluck G. Early childhood caries (ECC): a preventive-conservative treatment mode during a 12-month period. *J Clin Pediatr Dent*. 2006;30(3):191–4.
- Schmoeckel J, Gorseta K, Splieth CH, Juric H. How to Intervene in the Caries Process: Early Childhood Caries - A Systematic Review. *Caries Res*. 2020;54(2):102–12.
- Zhi QH, Lo EC, Lin HC. Randomized clinical trial on effectiveness of silver diamine fluoride and glass ionomer in arresting dentine caries in preschool children. *J Dent*. 2012 Nov;40(11):962–7.