Complementary Therapies in Clinical Practice 35 (2019) 381–382

Contents lists available at ScienceDirect

Complementary Therapies in Clinical Practice

journal homepage: www.elsevier.com/locate/ctcp

Comments on: "Effectiveness of honey dressing in the treatment of diabetic foot ulcers: A systematic review and meta-analysis"

ARTICLE INFO

Keywords:
Honey
Diabetic foot

To the Editor,

We recently read with great interest the article titled "Effectiveness of honey dressing in the treatment of diabetic foot ulcers: A systematic review and meta-analysis" [1]. After reading this article, we would like to address some methodological and statistical issues of this article.

First, the authors used Cochrane risk of bias tool [2] to assess the risk of bias of the included studies. Five out of the six included studies were rated as high risk of bias in at least two domains of the tool [2]. Based on the suggestion of the tool, those studies should be rated as overall high risk of bias studies [2]. But, the authors arbitrarily claimed that "if the study fully met the criteria of the tool, the quality of the study was classified as grade A. If the study partially met the criteria, the quality of the study was classified as grade B. If the study did not satisfy the criteria at all, the quality of the study was classified as grade C" [1] without citation. Furthermore, poor quality of studies classified as grade C were excluded; the above mentioned overall high risk of bias studies were rated as grade B [1]; thus, making the quality of included studies invalid and unconvincing.

Second, studies with multiple intervention groups are often included in meta-analysis. A serious unit-of-analysis problem arises if the same group of participants is included twice in the same meta-analysis [2]. The authors made serious mistakes while synthesizing the results from these studies with multiple-arm design [1]. For instructions on managing data from studies with more than two intervention groups, we suggest the authors refer to section 16.5 of the Cochrane Handbook [2]. Moreover, the analysis for some outcomes, such as honey dressings on bacterial clearance time and wound debridement time, reported in the results section is often derived from only one multiple intervention study [1]; this creates questionable analysis.

Third, the authors have mentioned that there was no uniform type of honey evaluated in these studies in the limitation [1]. In addition, the methods that were used as control, including functional dressing, conventional iodine dressing, saline dressing, nanocrystalline silver dressing, and placebo, were varied [1]. This made the synthesized result less reliable. For example, the authors evaluated the effectiveness of honey dressings on wound healing rate. The result showed that honey dressing has an 85% higher odds of wound healing rate when compared to other dressing types [1]. As shown in Figure 2 of their study, the study from Imran et al. constituted 56.8% weight [1]. That study demonstrated that 75.97% wounds are completely healed with honey dressing and 57.39% wounds with saline dressing ($p < 0.05$) [3]. The result from the other studies using conventional iodine dressing, nanocrystalline silver dressing or placebo as control showed no significant difference between honey dressing and control [4–6]. Furthermore, Imran et al. [3] excluded patients with local signs of infection (presence of pus, initial culture positive) in the wound, which is contradictory to theoretical basis that honey has broad-spectrum bactericidal properties and helps in the management of wound infection [1]. Thus, it is difficult to draw a firm conclusion that honey dressing provides better wound healing rate than other dressing types.

In conclusion, the quality of this study should be properly reassessed; it requires relevant citations as we have indicated above. Rigorous data synthesis as outlined in the Cochrane Handbook is crucial to do an accurate meta-analysis. The objective for meta-analysis should be clear. Otherwise, a comprehensive systematic review provides more information than an incorrect meta-analysis.

Declarations of interest

None.

Acknowledgements

We thank Professor Winston W. Shen for English-editing of our revised manuscript.

https://doi.org/10.1016/j.ctcp.2019.03.019
Received 23 February 2019; Received in revised form 27 March 2019; Accepted 27 March 2019

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ctcp.2019.03.019.

Funding

None.

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