The efficacy of supportive post-implant treatment in preventing from peri-implant diseases and implant loss: A Systematic review and Meta-analysis

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BACKGROUND
Nowadays, an increasing number of attentions have been drawn on peri-implant diseases, including its etiology, prevalence, management and preventive maintenance.

INTRODUCTION
It has been known that controlling or treating peri-implant lesions is regarded as unpredictable because of the susceptibility in peri-implant tissue by nature. Hence, prevention of disease formation is the key of peri-implant health.

In order to establish a comprehensive protocol for implant maintenance, various strategies have been described in articles with distinct terms. A recent guideline of maintenance care revealed its diagnosis-based treatment strategy as previous studies, and it included surgical interventions as well. Aside from the participation of supportive post-implant treatment (SPIT), some other contributing factors could have influences on peri-implant conditions.

Unlike the previous reviews that merely focused on the articles with SPIT, the present review conducted a comprehensive systematic review and meta-analysis according to clinical outcomes in patients with SPIT and non-SPIT. The primary purpose was to compare the survival rate (SR), peri-implant mucositis and peri-implantitis in both groups. The secondary purpose of the review was to find the correlation between certain factors (history of periodontitis, interval for maintenance, chemical agents application) and outcome of SPIT.

METHODS & RESULTS
Records identified through electronic database searching (n=337)
Records after duplicates removed (n=183)
Records excluded based on title and/or abstracts (n=166)
Records screened (n=163)
Full-text articles exclude (n=7)
Full-text articles assessed for eligibility (n=17)
Studies included (n=20)

Records additionally identified through hand searching (n=24)

Primary outcomes
SPIT
Non-SPIT
Survival rate
Peri-implant mucositis
Peri-implantitis
Secondary outcomes
History of periodontitis
Chemical agent application
Interval of maintenance

SUMMARY
In this review, SPIT can potentially improve peri-implant health in terms of implant survival rate, prevent peri-implant mucositis and peri-implantitis. Additionally, the correlation in history of periodontitis, recall interval and adjunctive use of chemical agents during SPIT to implant survival rate and incidence of peri-implant mucositis and peri-implantitis could not be found in present review.

DISCUSSION
1. The present review was a pioneer to make a comparison between SPIT and non-SPIT groups based on the outcomes in meta-analysis. Besides, SPIT could be beneficial in enhancing peri-implant conditions in perspectives of better oral hygiene, plaque reduction and early detection of disease in initial stages.

2. There is no consensus on specific recall frequency for every patient, and an optimal recall interval may not be suitable for all cases. As for history of periodontitis, residual pockets and non-SPIT might be more crucial factors to lower the survival rate of implants. In accordance with one review with meta-analysis, adjunctive therapy with chemical agents could not improve the clinical outcomes achieved by mechanical debridement.

Nowadays, an increasing number of attentions have been drawn on peri-implant diseases, including its etiology, prevalence, management and preventive maintenance.