A RANDOMISED-CONTROLLED TRIAL OF THE USE OF MANUAL AND POWERED TOOTH BRUSHING TECHNIQUES IN HAEMATOPOIETIC STEM CELL TRANSPLANTATION RECIPIENTS.

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Introduction

Basic oral care is the most common recommendation for managing oral mucositis (OM) in autologous hemaotopoietic stem cell transplantation (ASCT) patients. The MASCC guidelines suggest the use of a soft manual toothbrush. In a healthy population, powered toothbrushes have reported benefits in plaque removal and gingivitis reduction. It is unknown whether the use of an powered toothbrush has similar benefits in patients with OM.

Objective

To compare a manual and an powered toothbrush (MT and PT) when used by patients undergoing ASCT, regarding patients compliance, severity of OM and the removal of plaque,.

Methods

A RCT with two groups (n=23 MT, n=23 PT) was conducted in ASCT patients. During the hospitalization period, patient compliance plaque and OM were scored daily.

Results

- There was no difference in patient compliance between both groups. Patients complied to the protocol to brush their teeth, but did not brush 4 times a day as recommended. Figure 1
- The use of a PT resulted in a decrease of the plaque scores by 6.98, as compared to manual brushing. (95% CI for decrease=[2.06, 11.89] p=0.006.)
- No differences were seen in OM scores between both groups OM p=0.968; 95% CI: [-1.19, 1.14]. Figure 3
- A significant positive correlation was found between plaque scores and OM severity $R^2=0.15$, $p=0.0102$; 95%CI [0.04;0.27]($I^2=68\%$ $p<0.001$).

Figure 1. Results for brushing frequency compliance in manual (MT) and powered tooth brushing (PT) groups (either 4 times per day, or less than 4 times per day) as a function of time. The shaded area indicates mean OMNI scores as based on the total group (PT and MT).

Figure 2. Mean plaque scores in manual (MT) and powered tooth brushing (PT) groups as a function of time. The shaded area indicates mean OMNI scores as based on the total group (PT and MT).

Figure 3. Mean OMNI score for manual (MT) and powered tooth brushing (PT) groups as a function of time.

Conclusion

There was no significant difference in compliance and the incidence of OM and between both toothbrushes, but there was a significant difference in removal of plaque in favor of the powered toothbrush