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Original Article

Influence of apigenin and seashell nanoparticles on the biological attitude of soft denture liner

A B S T R A C T:

Objective: To determine the “biocompatibility” of a soft denture liner impregnated with apigenin and seashell nanoparticles via histopathological assessment in rabbit models. *Materials and Methods:* Twenty-six albino rabbits aged 5–7 months and weighing, 1.25–1.5 kg were randomly divided into apigenin and seashell-modified groups, n = 13 each). A total of 104 disc-shaped specimens (3 mm thick and 5 mm in diameter) of a heat-cured soft liner, (GC, USA) were prepared. In the apigenin group, each rabbit was subcutaneously implanted with 4 specimens: (positive control, unmodified-liner, and 0.25 %, 0.5 %, and 1 % of apigenin-modified liner). In the seashell group, rabbits were implanted with positive control and 1.25 %, 2.5 % and 5 % seashell-modified liner. A non-implanted incision was performed for all the groups as a negative control. Histopathological observations were evaluated according to inflammatory and angiogenesis scores 14 days after implantation. *Results:* A significant decrease in inflammatory responses and an increase in angiogenesis were observed for both apigenin and seashell-modified soft liner groups. Higher compatibility effectiveness was positively related to and recorded in the increased ratios of nanoparticles within the soft liner material. *Conclusion:* Apigenin and seashell-modified soft liners at higher ratios 1% and 5% respectively were more compatible with the rabbit mucosa.