Medical Xpress

Cytotoxicity and physical properties of glass ionomer cement containing flavonoids

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At the 97th General Session & Exhibition of the International Association for Dental Research (IADR), held in conjunction with the 48th Annual Meeting of the American Association for Dental Research (AADR) and the 43rd Annual Meeting of the Canadian Association for Dental Research (CADR), Aline de Castilho, University of Campinas, Brazil, presented a poster on "Cytotoxicity and Physical Properties of Glass Ionomer Cement Containing Flavonoids." The IADR/AADR/CADR General Session & Exhibition is held at the Vancouver Convention Centre West Building in Vancouver, BC, Canada from June 19-22, 2019.

De Castilho and coauthors sought to explore whether incorporation of flavonoids into glass ionomer ceramics could improve its biocompatibility without adversely impacting its's physical properties by examining the cytotoxicity on human keratinocytes and the physical properties. The flavonoids Apigenin, Liquiritigenin, Naringenin and Quercetin were manually incorporated into GIC according to their minimal inhibitory concentration previously determined. In the control group, no incorporation was performed. The physical properties of the GICs containing or not flavonoids were evaluated by compressive strength, diametral tensile strength, surface roughness and hardness.

The results showed that GIC without flavonoids were significantly more cytotoxic than the experimental groups. Compressive strength, diametral tensile strength and surface roughness of the experimental GICs were comparable to those of the control group, but the hardness was

significantly increased by the incorporation of Naringenin and Quercetin. Overall, the incorporation of flavonoids improved the biocompatibility as well as enhanced the hardness of the GIC, not influencing negatively other physical properties of the restorative material.

More information: This poster presentation, #2121, was held on Friday, June 21, 2019 at 11 a.m. in West Exhibition Hall B of the Vancouver Convention Centre West Building, Vancouver, BC, Canada.

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