Alternativas para mejorar las propiedades mecánicas de dientes de PMMA utilizados en prótesis total - estudio de viabilidad [

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text (article)

Analítica

With the aim to improve the resistance to the waste of teeth of PMMA used in total prosthesis, in the preliminary stage different alternatives of reinforcement materials were evaluated as hydroxyapatite, ceramic spheres and Wollastonita. Once selected the Wollastonita, we defined an appropriate relationship monomer ~ polymer and a silane like couple agent. On the elaborated samples following a standard industrial procedure, they were carried out qualitative and quantitative tests to evaluate the quality of the PMMA reinforced regarding the PMMA without commonly used reinforcement. From the resistance tests to the waste and hardness it is observed that the addition of the Wollastonite produces an improvement in this properties, although for the resistance test to the indentation, in some cases a deterioration is presented regarding the value settled down in the norm ICONTEC 159 I defined to evaluate the behavior of teeth manufactured starting from synthetic resins. The results indicate a special sensibility to the homogenization of the mixture PMMA-Wollastonite and the necessity of a pre~ treatment of the Wollastonite with the silane g~aminopropiltrietoxisilane to improve the compatibility between this and the PMMA. Compound materials were obtained very conformed from the point of view of the union of the phases that compose it, without producing significant changes in processes involved in the production of such dental pieces as preparation and pressed. They are necessary some adjustments before their possible application to industrial scale, among those that stand out, to obtain a better dispersion of tl1e Wollasto¬nite to avoid tl1e agglomerates tl1at add some betas to tl1e final product and a new formulation of tl1e colorings to adjust tl1e color to tl1e traditionally used guides
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