

47. Adherence of candida albicans on polyamides in comparison with conventional acrylic surfaces- a short study

material.. Key words: pmma, polyamide, surface roughness, candida albicans.

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Avinash Venkatesh Mehendale

Century Dental College

Objective: to compare the adherence of candida albicans on a polyamide surface with polymethyl-methacrylate (pmma), whose surface roughness was kept within the acceptable range after using conventional polishing techniques. .
Background: poly methyl methacrylate (pmma) resins have been routinely used as a denture base material because of its desired properties and simple processing techniques. Polyamides developed as alternatives to pmma, are nylon based materials, which are flexible in nature. However, the surface characteristics and especially the microbial adhesion of polyamides have not been extensively evaluated in the literature..
Materials and methods: a polyamide material (sunflex) and pmma (trevalon) were tested and compared. 10 rectangular samples of each material were processed and conventionally polished. The evaluated surface roughness values of both the materials were below the accepted threshold of $0.2\mu\text{m}$ ra. Later these samples were tested for adherence of candida albicans..
Results: the average ra value of polyamide after polishing was $0.044\mu\text{m} \pm 0.2$. the student 't' test, showed a significant difference in the surface roughness of the two materials, with pmma being smoother than polyamide ($p = 0.005$). The average candida colony count per microscopic field on 2nd and 4th day was significantly more on polyamide surface and it again increased on 8th and 12th day respectively but insignificantly..
Conclusion: polyamide has a relatively rougher surface which tends to increase the adherence of candida compared to pmma. This might compromise the long term bio-compatibility of polyamide as a denture base