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**Anti-Candida Effect of Crosslinked Chlorohexidine Loaded HPMC Films.**

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**Objectives** This study is aimed at investigating the effects of mucoadhesive polymer films loaded with chlorohexidine diacetate (CXD) on *Candida albicans* and *Candida glabrata* for potentially, topically treating oral Candida infections.

**Methods** The films were prepared by solvent-casting 2% hydroxypropyl methacrylate (HPMC; K4M [MWt 86,000] and K15M [MWt 120,000]) crosslinked with polyethylene glycol. CXD was added (1g to 100ml of mixture). The films were protected by a backing layer (ethylene cellulose). The dried films were cut into disks (10mm diameter). Drug release was measured by UV spectrometry of samples collected every 20min for 2hrs, and every 1hr afterward for total of 7hrs of disks submerged in 6ml deionised water. . Planktonic *C. albicans* and *C. glabrata* cultured in a liquid medium were exposed to CXD serial dilutions to identify the minimum inhibiting concentration (MIC) then drug release samples were tested to confirm the duration of the therapeutic effect.

**Results** The K4M HPMC films exhibited a release of CXD above 20 µg/ml until 180 minutes. MIC of CXD was 15.7 µg/ml and 3.9 µg/ml for *C. albicans* and *C. glabrata* respectively. Samples collected at different time points from the mucoadhesive films consistently inhibited *C. albicans* growth for 180 minutes while *C. glabrata* was inhibited for 240 minutes.

**Conclusions** K4M HPMC films crosslinked with 1% polyethylene glycol can potentially sustain a therapeutic effect for at least 3 hours. Further objective is to test the efficacy of the films on fungal biofilms. The results will provide insight into the clinical potential of the system in the management of oral candida infection and beyond.