Analysis and comparison of microbiological contaminations of two different composition pacifiers

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Pacifiers are important devices during the development and growth of babies and young children, mainly owing to possible prevention of sudden instant death syndrome and provision of a comfort feeling towards stress and anxiety. However, permanent contact between pacifier and oral microflora leads to the creation of a biofilm in the pacifier's surface.

Besides, the contamination of pacifier's outsides toddlers' mouth cannot be disregarded by being dropped and immediately used by infants, enabling the entrance of pathogenic bacteria that might generate relevant and eventual systemic infections.

The main objectives of this study were to develop a method to quantitatively analyse the contamination of pacifiers used by infants and to compare the contamination susceptibility

of two different materials: natural rubber and silicon. Ten samples were collected in a nursery in North of Portugal and properly kept in sterile bags during its transportation to the laboratory. Subsequently, a microbiological collection was performed from the pacifiers into Petri dishes previously filled with nutrient agar. Following incubation for 48 h, bacterial colonies were counted.

It was possible to confirm the presence of several colonies in the studied samples and, according to the obtained results, there was a tendency to a greater contamination in silicon than in rubber pacifiers.

The present study demonstrates that it's important to define strategies to ensure the convenient cleaning and sterilization of pacifiers, owing to their massive contamination. Further studies, with larger number of samples, would be important to conclude about the most suitable composition of pacifiers, regarding the contamination prevention.

Keywords Silicon, rubber, childcare, biofilm, measurement