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LETTER TO THE EDITOR

HYALURONIC ACID-BASED MEDICAL DEVICE AND ORAL DISORDERS: CAN IT BE USED IN PAEDIATRIC DENTISTRY?

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Due to its physical and biological characteristics and safety profile, hyaluronic acid is very widely used in numerous clinical conditions, ranging from its best-known use in cosmetic surgery (as a filler and for its ability to promote tissue regeneration and therefore minimise scarring) to lesser-known fields such as ophthalmic surgery, major abdominal surgery (where it is used to prevent the complication of adhesion bands) and intra-articular use. Studies were recently published in which this type of device was also used in paediatric patients for the management of inflammatory disorders of the oral cavity and teething symptoms. As this is a highly topical field for dentists, we felt it would be useful to review the efficacy and safety of the device in the paediatric population treated, and analyse any discrepancies with the results obtained in the adult population. The preparations of hyaluronic acid used in pediatric dentistry, thanks to their anti-inflammatory and angiogenic properties, proved to be very effective in therapy of oral diseases in children. Further clinical research is needed to confirm the effectiveness of these products to dispel doubts about any side effects.

Hyaluronic acid (HA), a polysaccharide found in the connective tissue of vertebrates, is a polymer of glucuronic acid and N-acetyl glucosamine, a member of the family of high-molecular-weight glucosamines. It is one of the main constituents of the extracellular connective tissue matrix of the skin, joints, eyeballs and other tissues, including periodontal tissues. Unlike other glucosamines, the synthesis of which takes place at intracellular level in the endoplasmic reticulum, HA is biosynthesised in the inner portion of the cell plasma membranes by three different synthases: HAS1, HAS2 and HAS3 (1). HAS1 and HAS2 synthesise high-molecular-weight HA, whereas HAS3 generates low-molecular-weight HA; this information is very important, because the two forms appear to be involved in different functions. In humans, the half-life of HA ranges between one and seventy days, depending on the tissue concerned, and its breakdown mainly takes place in the liver and kidneys, to which it is conveyed through the lymphatic system under physiological conditions (2). In healthy tissue, HA is present in the form of a high-molecular-weight polymer, although fragments of HA with a lower molecular weight may accumulate following a trauma or wound. Each of these polymers possesses specific characteristics,

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