

Aesthetic Medicine – New biostructuring materials: tricalcium phosphate

Preview of the publication of the book about filler
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Introduction

Among the many biostructuring materials that provoke an action of neocollagenesis, tricalcium phosphate represents interesting news.

The origin is determined by ceramics, which are non-metallic and non-organic materials.

It is a product that is already packed, ready to use and do not require, as many other fillers, an allergic test or a dilution before the use.

Indeed, tricalcium phosphate for cosmetic use is not in aqueous suspension as the polylactic acid, but is dispersed in hyaluronic acid.

So it conjugates the restructuring effect typical of these materials, and the immediate filling effect given by hyaluronic acid.

Materials: tricalcium phosphate and hyaluronic acid

Tricalcium phosphate, whose chemical formula is $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$, belongs to the large category of synthetic bioresorbable ceramics.

Hydroxyapatite also belongs to this category of products, but surely there are significant differences between the materials, first the disappearance from the tissues, which is much faster in the case of tricalcium phosphate.

The product is obviously chemically inert, bioresorbable and biocompatible.

Tricalcium phosphate particles have an average diameter of 40 Micron.

Once implanted, the tricalcium phosphate is phagocytosed by macrophages and slowly degraded by hydration in calcium and phosphorus ions.

The sodium hyaluronate is present in all living organisms in the intercellular matrix, in synovial fluid and cartilage.

The one used in the gel in combination with tricalcium phosphate has a molecular weight between 2 and 3 million Dalton.

Injective Technique

The injective technique, although still limited, is the actual experience of users, based on two effects of preparation: the filler effect of hyaluronic acid and the effect of neocollagenesis given by tricalcium phosphate.

So it is a product that has to be used deeply, subdermal, but also exploiting this immediate filler effect that allows us to give visible result immediately.

The best districts are definitely the cheekbones and the nasogenian furrows, but also the mandibular edge and the area of the cheeks that respond very well to the product.

According to the author's opinion, the mimic zones with thin skin are less indicated.

In aesthetic field, there is still not experience in other body districts.

The technique is always the retrograde tunneling, taking care to deposit small quantities of material at the time; it is better if you do so in the deep derma.

You have to pay attention, for the first times, to the easiness of the injection.

In fact, the product is very soft and this results in an absolute ease of installation. Instead, any overdosage has to be avoided, and the advice is to run the following sessions avoiding using too much material at a time.

Between the sessions it is better to wait a reasonable period of time to allow the manifestation of neocollagenesis due to tricalcium phosphate, generally about a month.

However, even the injective technique is still in progress, and further improvements are soon to come.

RESULTS

It is still too early to give results at long distance, but preliminary results are good and the author has not found the occurrence of major side effects

The great easiness of the injection and the good immediate aesthetic results have to be highlighted.

Conclusions

Tricalcium phosphate in gel made of hyaluronic acid represents an interesting and innovative alliance, which allows conjugating an immediate filler effect with the biorestructuring effect of tricalcium phosphate that instead develops more slowly reminding us other materials of this type.

The preliminary results are good, but it is necessary to wait for further confirmations especially to evaluate possible long distance collateral effects and the duration of the result.

Up to now, the bibliography about the cosmetic use of tricalcium phosphate on human being is still scarce.

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