Hyaluronic Acid In the management of gingivitis in young patients

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It has already been said how important hyaluronic acid is in the treatment of gingivitis and periodontitis and I will not bore you with a long introduction. I mainly deal with orthodontics and, as you know, is really difficult to obtain a strong compliance from young patients, so in the study that I will present our goal was to check the acceptance of treatment with hyaluronan in particular: Gengigel Pro Fluid 0,1% hyaluronic acid.

The exclusion criteria used were: patients with no gingivitis, in this case bleeding on probing under 5%, and antibiotics or anti-inflammatory use in the month before the study. The inclusion criteria were patients aging from 5 to 18 years old both included and a plaque index (by Sillness and Loe) over then 10%.

Two hundred patients from 6 to 16 years old were selected, male and female were similar in number, 43 of them were under fixed orthodontic treatment, while the rest was not.

Only one subministration of Gengigel PRO fluid 0,1% hyaluronic acid was given to the patients for 5 minute after IP and BOP score registration. After that, considerations of the patients on the flavour and the bourn effect were registered. The acceptance index puts together the initial burnt sensation score with the flavour consideration giving a score from 0 to 3.

Surprisingly an immediate effect on Bleeding took place. 42% of patients judged as pleasant the gengigel flavour while 39% of them did not suffer from an initial bournt sensation. The acceptance index mean was about 1,22; an optimal value if we consider that it was expressed by a child.

Our results were satisfying because no drop out was verified and it’s a really good result in terms of compliance. After evaluating our results we came to the conclusion that we need to find the way to let the gel remain for a long and continuous time in the desired area.

This is not possible with common gels, because of the physics features of them: every gels change viscosity in relation with temperature, when a gel is applied in the mouth it is easily washed away by oral fluids like saliva or gingival crevicular fluid.

So we start investigating on a gel able to release its active particles for a long and constant time. Professor Ceschel produced a gel using a poloxamer by Basf and excipient that has the ability to change its viscosity depending on the temperature. This thermosetting gel allows a wide range of dosage forms, and formulations for dentistry are already been registered in a EU patent. The gel changes its form from liquid to gel at 19 Celsius degrees, a temperature that may vary according to the excipients and active particles inside of it. In the photos of the gel in its “solid” form,

we can appreciate the steadiness of the gel and in this graphic how rapidly changes its form from liquid to solid and viceversa. (vaicyversa)

Physical and chemical exams were carried out on the thermosetting gel together with Hyaluronic acid and our results were as expected and the acid did not change the chemical properties of the gel. It’s interesting to see how much the gel in the solid form appear as a rock. The thermosetting property allows us to to spray in the interested zone the liquid form gel and to obtain the permanence of the gel in loco and of the active particles inside of it, released in a constant and regular way for a constant period. Hopefully the therapeutic effect is obtained at lower dosage than the traditional ones

The thermosetting gel can be also used directly in the solid form, like the traditional ones, with the advantage of remaining for longer in the place of application due to the no washing away from oral fluids. A great variety of active particles can be associated to the gel and it could be used in most of all the dentistry specialization.