Advantages of HEMOSTASYL for thixotropic wound dressing confirmed

Results from an empirical comparative study

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Haemostasis has proved fundamental for the prevention of excessive blood loss and for wound healing after injury, or wound setting. It is a basic prerequisite for flawless work in restorative dentistry. There are numerous tissue management systems for haemostasis and retraction on the dental market, including mechanical techniques and locally acting chemical agents, which can be applied alone or in combination with retraction sutures. In a survey in which German dentists tested the practicality of various haemostatic agents and compared them, the thixotropic HEMOSTASYL (Pierre Rolland, Acteon Group) achieved the best results. Among other things, the gel was found superior in terms of astringent and haemostatic effects, as well as handling properties.

In order to determine whether this product offers advantages over other products used for haemostasis, some 1,000 sample packs were distributed to dentists, orthodontists and oral surgeons throughout Germany, along with instructions for use and a questionnaire. Over 900 participants agreed to take part in the test. The questionnaire was developed in collaboration with the Department of Medical Biometry and Epidemiology at the University Medical Center Hamburg-Eppendorf. It consisted of two sections: the first part dealt with general haemostasis and their indications, and the second part asked participants to evaluate HEMOSTASYL and compare it with other products with respect to haemostatic properties, handling and time to haemostasis.

The best means of avoiding possible bleeding complications is a conservative procedure that causes little trauma to the tissues and vessels. In many cases, a sufficient local therapy can also help prevent bleeding complications during and after surgical procedures or reconstruction. In addition to the body’s own haemostatic mechanisms, there are a number of measures and substances in dentistry that support haemostasis. They can be mechanical, chemical, thermal or surgical, or any combination of these. The choice of product or technique depends on the clinical situation (localisation, and the extent or risk of bleeding), as well as on the clinician’s preferences.

Adopting a different approach to the products available on the market, Pierre Rolland introduced a new type of gel in Germany in 2007. HEMOSTASYL is a thixotropic product for light to moderately heavy bleeding and contains aluminium chloride. Its angled syringe applicator facilitates direct and precise application. The gel achieves its haemostatic effect through a combination of aluminium chloride and kaolin. This is mechanically augmented by the thixotropic properties of the material.

Haemostasis should begin to take effect in less than 2 minutes, after which the treated area should be free of bleeding. The gel is applied with the application cannula, with no pressure exerted on the gingiva. After haemostasis has been achieved, the turquoise-blue substance is removed with a light air and water spray and simultaneous suction (Figs. 1–4).

Over the course of the study, HEMOSTASYL was tested 2,342 times. The majority (69.4 %) of the participants applied it four to ten times. The properties of the product were compared with those of more than 13 other haemostatic products, including Viscotat, Ultrastat, Astringedent, Ultra- denta, and Racestypitine, Septodont, which were used by over 50 per cent of the participants. Just under half of the participants said impression taking was the most frequent indication, followed by composite fillings. Only one in ten reported using it in tooth preparation. Other indications included cementation, temporary crowns, bracket bonding, retainer bonding, and amalgam and CEREC restorations.

Using the Mann-Whitney test, it was determined that the participants rated haemostasis with HEMOSTASYL statistically significantly better than with the other products for the listed indications. Almost 87 % (443) of the participants gave haemostasis with the thixotropic gel a score of 1 or 2. Only 69.4 % (354) of the participants gave any of the reference products such a high rating. A result of no bleeding after application of HEMOSTASYL was reported by 32.2 % (164) of the participants. With the reference products, only 20 % achieved this effect. Moderate bleeding with HEMOSTASYL was reported by only 10.4 % (53) of the participants. By contrast, moderate bleeding after application of one of the reference products was relatively frequent (26.3 %).

The gel from Pierre Rolland also achieved a statistically significantly better result with regard to handling, over 90 % rated the handling of HEMOSTASYL as very good or good. This rating was given to the other haemostatic products in only half of the cases. These received a score of 1 from only 13.0 % (71) and a score of 2 from 40.6 % (207) of the participants.

Using the chi-squared test, it was determined that the rating for HEMOSTASYL regarding time to haemostasis was also statistically significantly better than for the reference products. More than three-quarters (78 %) of the participants rated the other products just as highly.

Considering all properties together (haemostasis, handling/application and time to haemostasis), HEMOSTASYL was rated better overall than any other reference product.

The aluminium chloride in the gel appears to offer additional enhancement of haemostasis. As it can be applied directly and precisely in the mouth with the angled syringe applicator, it also fared better with the testers with regard to its handling and application. Other advantages are that it can be removed easily with an air and water spray and is easy to detect owing to its high-contrast turquoise colour. In addition, HEMOSTASYL was given a higher rating by most of the participants with respect to the time factor, as treatment (for example, taking an impression or bonding inlays) can be continued immediately after haemostasis with the haemostatic wound dressing under optimal conditions.

Participants also reported other benefits of the product, including painless treatment, particularly when the wound dressing is applied to a healthy periodontium, and high tolerability without undesirable systemic side-effects, as can be the case with haemostatic agents containing epinephrine for example.

Overall, HEMOSTASYL distinguishes itself with its thixotropic properties and consequent ease of application and very good adhesion to the tissue without exerting pressure, as well as the associated mechanical effect. The results proved that HEMOSTASYL is indicated for efficient haemostasis in cases of light to moderate bleeding. With clear indications, easy application and reduced risk to the patient, it can be considered another step forward in quality assurance in the dental practice.

Editorial note: A list of references is available from the publisher.

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