



Infection Control

Is **Clinisept+** the ultimate skin disinfectant?

A new skin disinfection technology has been launched into the aesthetics sector and it is creating quite a stir. First presented at the Distributor's Den at Aesthetic Medicine Live in early 2017, Clinisept+ is a high purity, stabilised hypochlorous skin cleansing technology that is now being brought to market by Clinical Health Technologies in partnership with Aesthetic Source.

With greater levels of cleansing, a non-hazardous safety profile and better patient outcomes Clinisept+ is being hailed as one of the most significant advances the industry has seen for years.

SKIN HYGIENE AND ITS ROLE IN ENSURING PATIENT SAFETY

Any penetration of the dermal layer has the potential to cause problems. Invading pathogens get into the skin and, if not killed off by the body's immune system, can quickly lead to infection.

We are all aware of the dangers of infection in medical healthcare environments, where hospital acquired infections such as MRSA can lead to severe complications often resulting in amputation and even fatality.

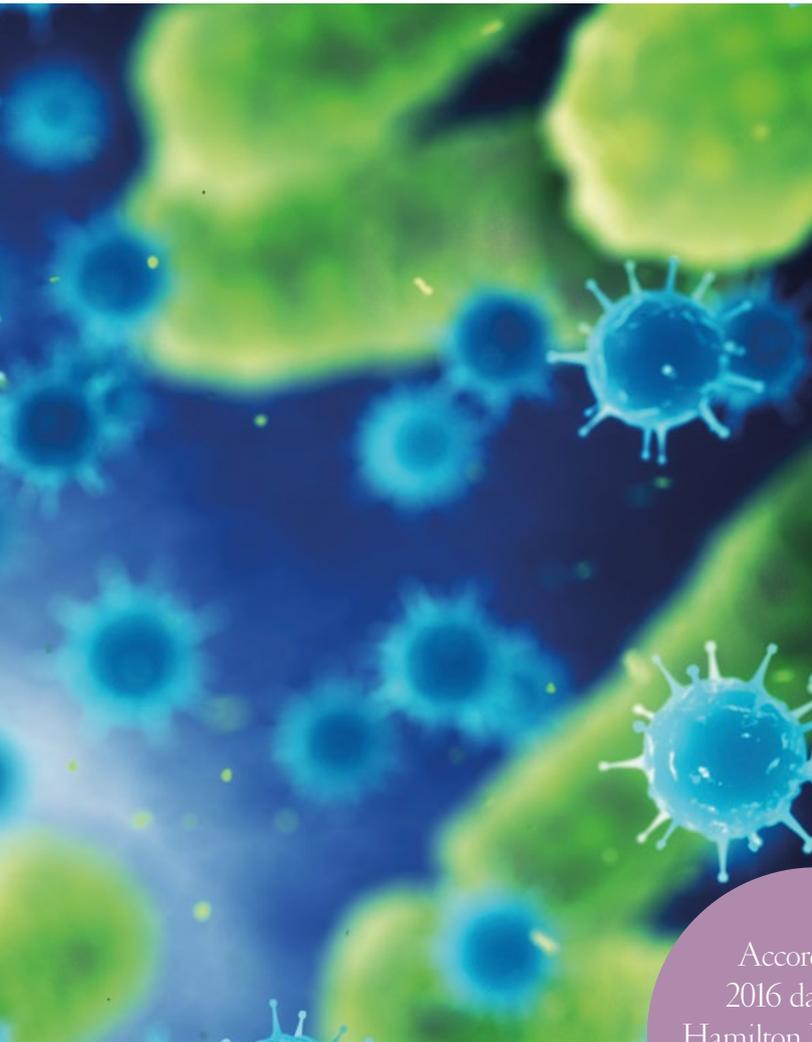
Fortunately, in the aesthetic environment infections tend to be of a less serious nature. However, they do still occur

regularly and can be highly distressing to all concerned – at the very least causing treatments to take longer to heal and to require antibiotics, whilst more serious infections can be so damaging as to cause permanent scarring and can require corrective surgery to eradicate the cause of the infection.

According to data from a report on 2016 claims by leading aesthetic insurers Hamilton Fraser Cosmetic Insurance, 30% of the claims received were infection related. All of these claims were made either because the injury occurred as a result of the infection, (e.g., a permanent scar was left as a direct result of the post-treatment infection), or it was an additional allegation as part of a bigger claim. For example, a PDO thread lift claim where infection was contracted from threads which were left outside of the skin.

In recent months, there has been an increase in the incidence of reported aesthetic infections. In January 2017, Public Health England investigated three separate cases of blood-borne viruses being transmitted by micro-needling, and there have been several documented cases of biofilm infection from injection procedures that have required surgery to remove the infection.

Acute skin infections can occur following any procedure where the normal integrity of the skin is compromised. Typically, this is following an intradermal injection such as when performing dermal fillers, botulinum



aesthetics, that really hasn't moved on much for several years. There are a wide range of products on the market which are almost all either chlorhexidine gluconate or povidone iodine based. Chlorhexidine gluconate comes as either a pink or clear solution and ranges in strength from 2% to 20% concentration.

Povidone iodine, (typically 10% concentration) is most usually used as a skin prep in medical and surgical procedures as it has a distinctive brown colour and stains the skin a similar tint, which is not especially helpful for most aesthetic applications.

Both chlorhexidine gluconate and povidone iodine are effective in disinfecting the skin, but they also have their drawbacks. Although bactericidal, chlorhexidine can be slow to take effect and it is typically not very effective against fungi or spores. Iodine is effective against viruses and funguses, but has a high incidence of skin sensitivity reactions.

Reactions are also a concern for chlorhexidine and there is a growing acknowledgement that serious allergic reactions can be triggered by chlorhexidine gluconate. In February 2017, the FDA reported an increase in incidence of exposure to chlorhexidine gluconate resulting in hospital treatment, with some of these resulting in anaphylaxis. (Medscape, 2 Feb 2017).

Additionally, there are an increasing number of studies that report reduced levels of bacterial susceptibility to chlorhexidine - including to methicillin-resistant *Staphylococcus aureus* (MRSA)² - one of the most prevalent causes of infection - and also *Klebsiella pneumoniae*.³

There are also numerous papers which cite the potential for chlorhexidine gluconate to cause DNA damage and cell death. Alcohol is often added to chlorhexidine to increase its efficacy, but this dries the skin and can cause respiratory and eye irritations.

The bottom line is that most of the products currently available are weak poisons, and are therefore only really suitable for use on unbroken skin.

These limitations have largely been ignored until now as there hasn't been a viable alternative. Now however Clinisept+ represents a significant step forward not only because it delivers more effective cleansing, but because it is also more compatible with the skin.

According to 2016 data from Hamilton Fraser, 30% of claims received were infection related

toxin treatments, micro-needling or sclerotherapy. However, it is also possible with non-penetrating treatments such as chemical damage following skin peels or thermal damage caused by laser or intense pulsed light.¹

HYGIENE AND THE AESTHETIC CLINIC

The importance of patient hygiene in the aesthetic sector is well documented: best practice requires following a proper aseptic procedure at all times, as well as using skin cleansing/disinfection products that provide adequate protection against infection. Patient safety, and the best results, are only achieved when both elements are delivered together. Ultimately, using an effective skin cleanser is the backbone of any aesthetic medical protocol; if you are not using a product that disinfects well, it makes no difference how carefully you apply it.

Unfortunately, skin cleansing is an area of healthcare, and consequently



A NEW TECHNOLOGY?

Lethal to pathogens

Hypochlorous is not a new discovery - it has long been recognised as the most effective disinfecting chemistry available, (being rapidly and completely bactericidal, fungicidal, virucidal and sporicidal), and is actually the same chemistry that the human immune system uses to fight infection.

Understanding its chemistry doesn't make it any easier to manufacture however, and poor stability, and therefore limited shelf life, have previously made it all but unusable unless applied immediately > following manufacture; as is the case

with disinfecting hospital endoscopes, a job it has been doing successfully for many years. Clinical Health Technologies has perfected an incredibly pure and stabilised version of this unique chemistry, which gives it a shelf life of two years, whilst fully retaining its multi-pathogen efficacy.

There are a plethora of applications for a broad-spectrum disinfectant that is as effective as this. However, it is in human healthcare applications where its benefits really shine through, as, in addition to its very impressive antimicrobial properties, this technology is incredibly safe to use, and in particular, is safe to use on skin.

Safe on human skin

Given its aggressive ability to kill all types of pathogens we would typically expect such a chemistry to carry a plethora of hazard warnings, but the Clinisept+ products have none. In fact, Clinisept+ is safer to handle and use than the existing skin cleansers and disinfectants it replaces, which are typically labelled as being toxic, corrosive and causing serious eye damage.

Where chlorhexidine is combined with alcohol, these products are also flammable. In contrast, Clinisept+ has a skin neutral pH, is non-toxic, contains no alcohol and is even non-cytotoxic to re-growing skin cells. As well as rigorous testing of Clinisept+'s disinfecting ability, (it passes most EN standards in seconds), extensive skin sensitisation testing has also proven it to be completely non-sensitising and non-irritating.

So how can something that's so safe to humans be so lethal to pathogens? The key is in its method of action. Clinisept+ is a very weak acid, (weaker than carbonated soft drinks), but is strongly oxidising, which means that it readily penetrates and breaks down the cell walls of pathogens. Because human cells are 10 times larger, and much more robust than those of pathogens, human cells are not affected.

A further benefit of Clinisept+'s oxidising method of action is that it is not subject to antimicrobial resistance - pathogens cannot become immune to it.

Non-cytotoxic

Clinisept+ is even non-cytotoxic to re-growing skin cells, which sets it apart from almost every other skin disinfectant on the market, and certainly those that have anything like the efficacy. The ability to disinfect without damaging regenerating skin is a tremendous advantage in aesthetic applications, where (intentional) damage is often being caused to the dermal layer.

In contrast, most disinfecting chemistries, however weak, are harmful to re-growing skin and cell regeneration is often impaired as a result. Clinisept+ causes no harm to re-growing skin cells, therefore skin regrowth isn't slowed. This, combined with the ability to achieve very high levels of microbial decontamination, makes Clinisept+ the ideal partner for applications where skin is re-generating. The ability to kill the pathogens that inhibit wound healing,

without hindering the growth of new cells, enables the skin to re-grow at its natural rate; which is typically swift.

"Clinisept+ represents a new era of skin disinfection", says Helena Collier, independent prescriber, aesthetic nurse practitioner and clinical director of Skintalks.

Although only recently introduced to the aesthetics sector, this technology is already well proven within ear-piercing environments, where it has been used as an aftercare lotion by one of the world's largest suppliers of piercings, on more than two million ear piercings to date; with zero incidence of reported infection. Just as importantly however, the piercing supplier has been able to reduce their claimed healing time, from six weeks to three weeks. Clinical Health Technologies has conducted rigorous trials of Clinisept+ in aesthetics applications, and has found similar benefits.

THE RANGE

Clinisept+ is available in two formats - Clinisept+ Prep & Procedure for in-clinic use, and Clinisept+ Aftercare, for use by the patient.

Clinisept+ Prep & Procedure is available in 400ml bottles, (suitable for decanting into galley pots), and is intended for use by the clinician before, during and after a procedure is conducted.

Clinisept+ Aftercare is supplied in 100ml spray bottles, for sale by the clinician to patients to use two to three times a day at home. The spray head of this bottle delivers a finely atomised mist, thereby enabling Clinisept+ to either be sprayed onto a cotton wool pad, or sprayed directly onto the treatment area. **AM**



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Lorna Jackson has been editor of The Consulting Room, the UK's largest aesthetic information website since 2003. She has become an industry commentator on a number of different areas related to the aesthetic industry, collating and evaluating statistics, plus researching, investigating and writing feature articles, blogs, newsletters and reports for The Consulting Room and various consumer and trade publications. She was awarded Journalist of the Year at the MyFaceMyBody Awards, 2014.