

EDUCATIONAL NOTES FROM DR. CARR SILVER NITRATE TOPICAL WOUND CARE

It has good spectrum of coverage and gets Candida as well which Mafenide does not. Complications of Silver Nitrate are that it stains everything (don't use on face), it leeches electrolytes (beware of HypoNa (may leech up to 350mmol/day/m² treated) and HypoK!), and in rare cases it causes Methemoglobinemia (MetHb). The treatment for MetHb, when symptomatic or >30% of Hgb, is Methylene Blue (1-2 mg/kg) given slowly over 5 minutes. MetHb is basically the ferrous ion (Fe⁺²) being oxidized to the ferric form (Fe⁺³). The irony of the treatment for MetHb, is that Methylene Blue in excessive doses causes MetHb! Go figure. By the way, the dose of 0.5% is important because it is histotoxic at 5%.

While we're on the topic, SSD has good spectrum, covers Candida, causes little pain on application, and is made by combining Silver Nitrate + Sodium Sulfadiazine. Unlike Silver Nitrate, it doesn't stain and it doesn't leech electrolytes. But it may cause reversible leukopenia. And it is a Sulfa drug so avoid in Sulfa allergies and beware of G6PD deficiency since it may cause hemolysis. Also, in TENS patients who sometimes get admitted to burn units, avoid use of SSD since sulfa is often the etiologic agent of TENS.

Mafenide has good eschar penetration unlike the other topicals but it hurts on application. It does not have activity against Candida so sometimes you will see Nystatin added to a Mafenide solution and it has limited activity against MRSA. It is a carbonic anhydrase (present in RBCs) inhibitor so it may cause a hyperchloremic metabolic acidosis with a compensatory hyperventilation response in the patient. The solution dose is 5% and I believe the cream doses are 8.5% and 11% which we apply to ears for cartilage penetration and sometimes you will see us do 'Sulfamylon Sandwiches' on wounds using the higher concentration cream slathered on some burn roll dressing or Kerlex. Sometimes it causes a rash in patients but does not usually require discontinuation. As you know, we call mafenide 'Sulfamylon' but it is not a sulfa drug.

These are not the only agents we use but are the most common ones in addition to Bacitracin.

Just a quick note on Acticoat since we use so much of it. Technically, it should be moistened with water to activate the release of Ag ions which have antimicrobial activity. It should never be moistened with NaCl since the resulting solution causes precipitation of AgCl crystals. However, if a patient's wound is moist then the wound itself will do the job of moistening the Acticoat. Also, it doesn't matter which side of the acticoat is touching the wound--dark or light. Both sides are made with impregnated Ag ions.

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