What happens or can happen in the skin lesion and during healing process of burn wounds 2.-3. degrees?

- damage of basal layer of epidermis and a part or whole dermis
- blood circulation is disturbed
- partial oxygen pressure (pO2) in tissue is diminished / Hypoxia
- electrically is created a short circuit and weak „injury current“
- risk for infection rised and also formation of biofilms
- necrosis and risk of scar formation
What can we do better or what can $^{1}\text{O}_2$-Redox-Complex do as local monotherapy to speed-up the healing process?

- Firstly the electric current is overriding signal (electrotaxis) to trigger collective cell migration and we must charge the empty skin (wound) battery

- Second let there be oxygen to correct $p\text{O}_2$ in wounded tissue and bring energy for ATP synthesis

- Singlet oxygen and ROS are signaling molecules

- The singlet oxygen is also a broad spectrum antibiotic

- Oxygen-Redox-Complex destroy the biofilms by means of lowering surface tension, through electric current, $^{1}\text{O}_2$-energy and through interruption of bacterial communication (quorum sensing) and inhibition of signaling molecule AHL through basic pH value of 9,0.

1$^{1}\text{O}_2$-Redox-Complex Gel with sealing-occlusive and hygroscopic features

- Gel seals the wound and works as a jumper cable

- Is ionized basic hypertonic (pH 9,0 and sea salt concentration of 3 %) seawater solution / gel

- Get voltage of 600 mV, electric current of 200 mA and electric conductivity of ca. 50 mS / cm

- With high viscositiy (35 sec / dl) and hygroscopic features is effective as a open dressing maintaining balanced residual moisture
\( ^1 \text{O}_2 \)-Redox-Complex features as cell battery

- High electrical conductivity
- Optimal electrical current
- High Redox potential
- ROS / antiROS balanced / mitohormetic
- Basic hypertonic solution / gel with long remanence and stability
- Singlet oxygen as a signaling molecule
- Serumlle like with small water clusters
- Very good bioavailability and excellent biocompatibility

Method:

We treated until now 22 patients with the new therapy concept. This is based on the mechanisms of action of the redox complex and biophysical and cell biological properties of the lesioned tissue. Open treatment, short moist phase with irrigation solution for cleansing and removal of biofilms, followed by longer dry phase with wound gel. Through the longer dry phase \( ^1 \text{O}_2 \) can diffuse better into the skin. The redox potential is higher and more stable in the environment of a dry wound and the electromotive force is stronger.

Results:

Depending on the stage and size of burn wounds, all 22 burns healed in 10 to 22 days without complications, without infections or scars. We are representing 2 cases with local burns. Both patients showed a biofilm formation and an infection. After few days of treatment no more biofilm and no more infection were present, only a soft scab. At the end of treatment there was a good epithelialized skin with no scars.
Case presentation I

Burn 2. – 3. degree on the right palm with a hot iron

Treatment with Liquid forte and Gel

Before treatment

Before treatment, after opening the blister

After ninth day of treatment

After the thirteenth day of treatment

At the end of treatment after 3 weeks

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Case presentation II

Burn 2. – 3. degree on the right elbow with hot water

Treatment with Liquid forte and Gel

Before treatment

After third day of treatment

At the end of treatment after 10 days

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Not more therapy make better, 
but appropriate therapy do.

$^{1}\text{O}_2$-Redox-Complex with its multifaceted roles in:

- Bioactive redox-signaling therapy
- Signal transduction modulation therapy
- pH modulation and bio-physical properties
- Rebuilding redox potential and electrical current

**Conclusion:**

Local monotherapy with $^{1}\text{O}_2$ redox complex in liquid-gel-form, 
open - short moist - long dry, proved to be very successful (100%) in the therapy 
of localized burns 2. – 3. degree. The healing process and skin epithelization 
is much faster, the skin heals without scarring, and treatment is much more 
cost effective in comparison to other "standard" procedures.

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