

Clinical experience with Microdacyn® wound care in recalcitrant wounds of the head and neck

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Miracle Water?

Clinical experience with Microdacyn® wound care in recalcitrant wounds of the head and neck

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Disclosures and conflicts of interest:

- None

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Retrospective cohort study

- Head and Neck Wounds
- OCF / PCF/ NCF
- Infected donor sites
- Post I & D
- Infected Cavity
- Radiotherapy burns

Assessment

- Location and aetiology
- Level of exudate and type
- Wound bed
- Peri-wound / edge
- Pain score
- Comfort / satisfaction

- 35 patients
- 25 M 10 F
- Inpatient – 25/35 (71.42%)
- Outpatients – 10/35 (28.57%)
- 8/26 – Orocutaneous / Pharyngocutaneous fistula (OCF / PCF)

Duration of treatment – 11.5 days

Data

- Infection
 - 26/35 (74.28%)
- Level of exudate
 - Low 4/35 (11.42%)
 - Moderate 14/35 (40%)
 - Heavy 17/35 (48.57%)
- Erythematous peri-wound / edge
 - 28/35 (80%)
- Antibiotics – 18/35 (51.42%)

Microdacyn

- Antibacterial
- Antifungal
- Antiviral
- Anti-inflammatory
- Anti Allergenic

Microdacyn – Mode of Action

Super Oxidised Solution

Triple mode of
action for Superior
Wound Healing

Infection Control

Broad Antimicrobial
spectrum kills, prevents
and reduces infection,
including microbes
within biofilm

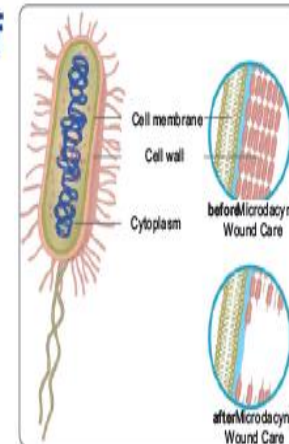
Inflammation Control

Anti-Inflammatory
& Anti-Allergenic

Stimulation of Wound Healing

Promotes Fibroblast
Migration & Increases
Capillary Perfusion

1. Disruption of the cell wall

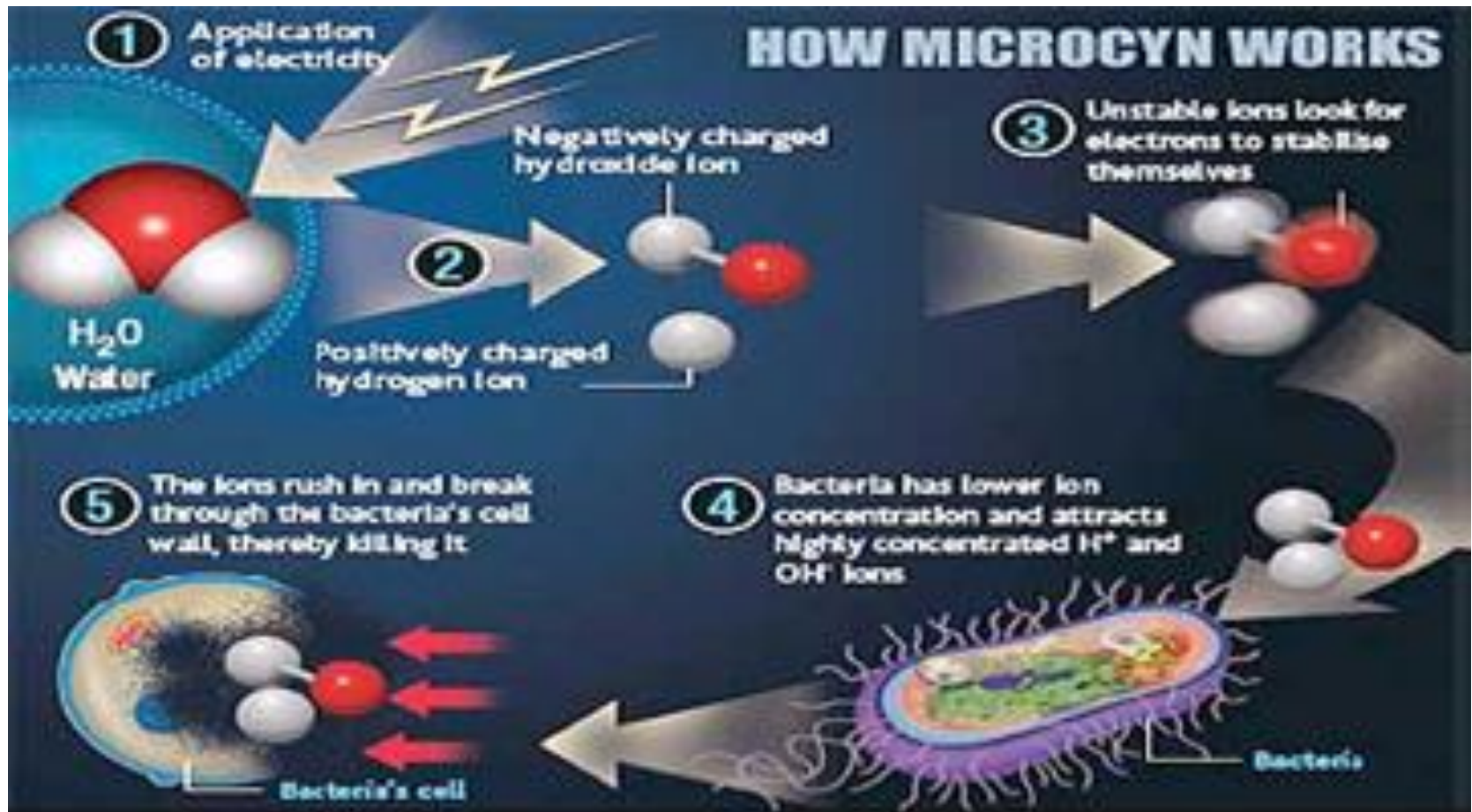


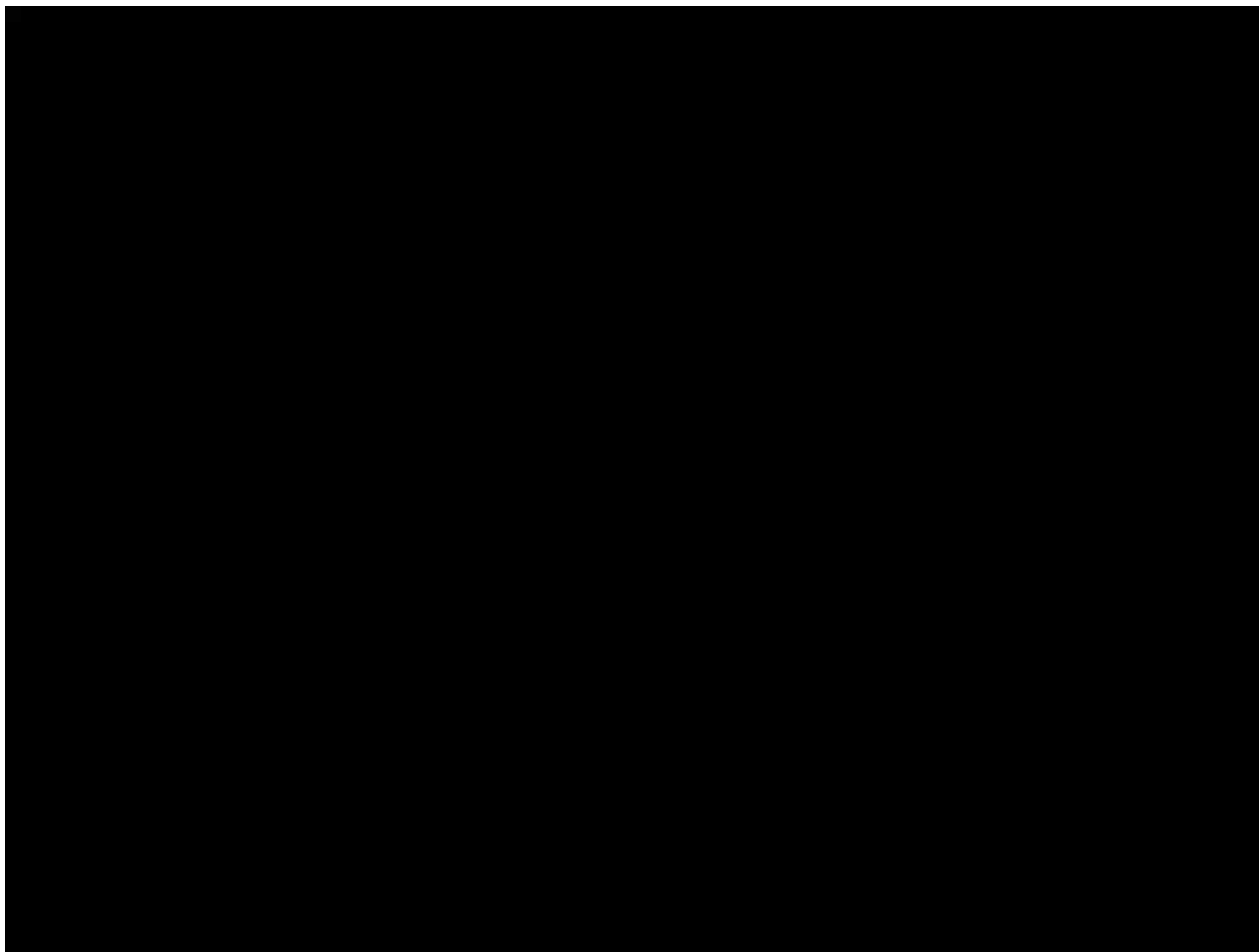
Microdacyn surrounds single-celled microorganisms. Super Oxidised Solution attacks the cell wall of the microorganisms and increases its permeability. Since our body's own cells have the necessary processes to prevent cell damage, they are not destroyed.

2. Osmolysis – bursting of the cells



The hypertonic Microdacyn solution ensures that water increasingly flows into the cells to equalize the osmotic gradient. The increasing internal pressure causes the cells to burst. This purely physical effect ensures a highly effective reduction in pathogen load.





Management

- Microdacyn Hydrogel – external wound / skin
 - Every 2-3 days
- Microdacyn solution – abscess cavity / fistula
 - BD – TDS irrigation

Outcome

- 31/35 healed
- 4/35 improved

OCF / PCF

- No malodour
- 50% - no antibiotics
- 8/8 100% heal rate
- Less than 14 days
- No return to theatre



8cmx8cmx7cm

A – 18/12/2015 microdcayn irrigation commenced

B – 21/12/2015 3 days post treatment

C - 26/01/2016 – OPC follow up

Post Auricular Abscess – quite a large area
Microdacyn irrigation 150 mls every dressing change
M/W/F



21/03/17



23/03/17



27/03/17



10/05/17

Day 0



Day 14

Day 0



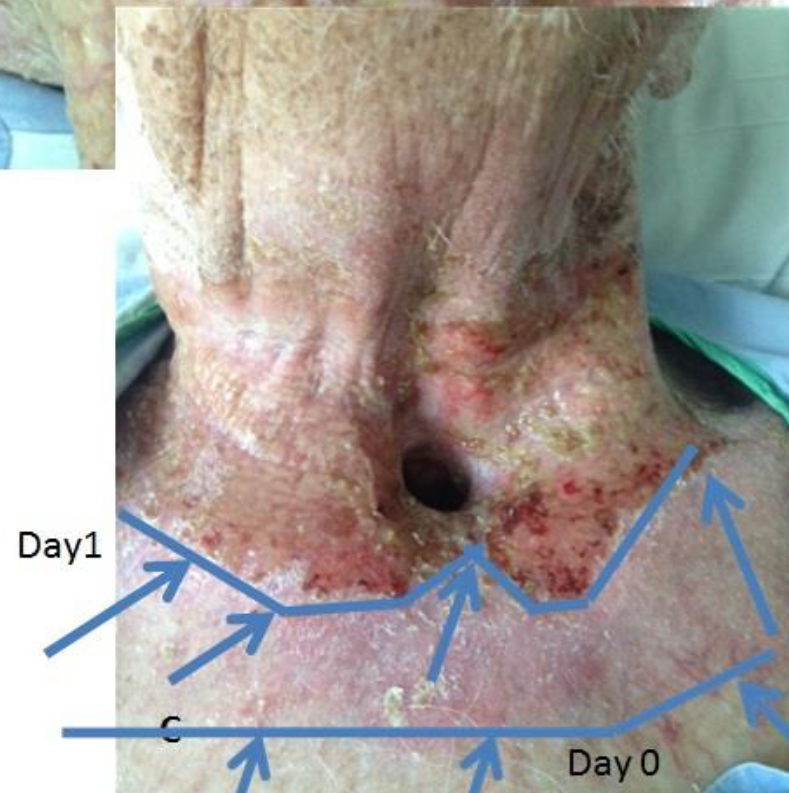
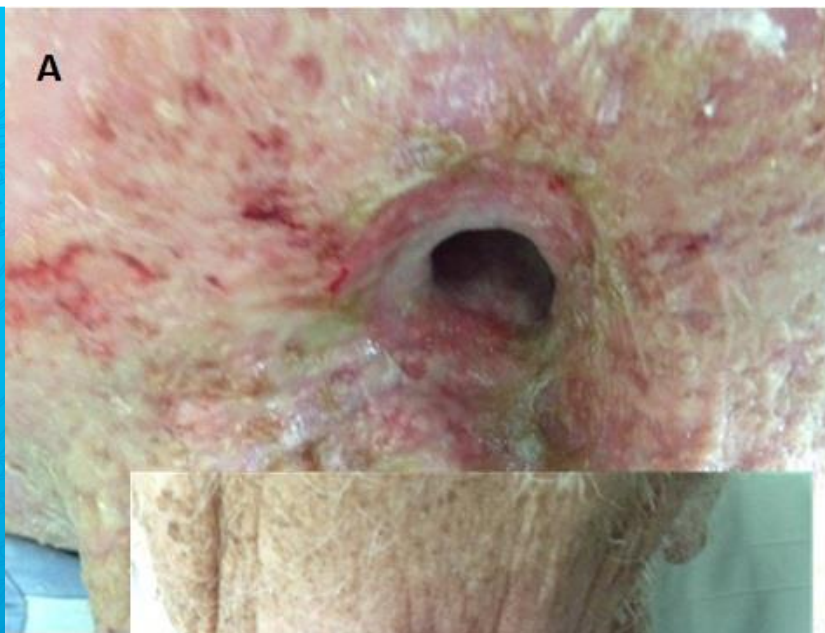
Day 12

02/03/17



06/03/17

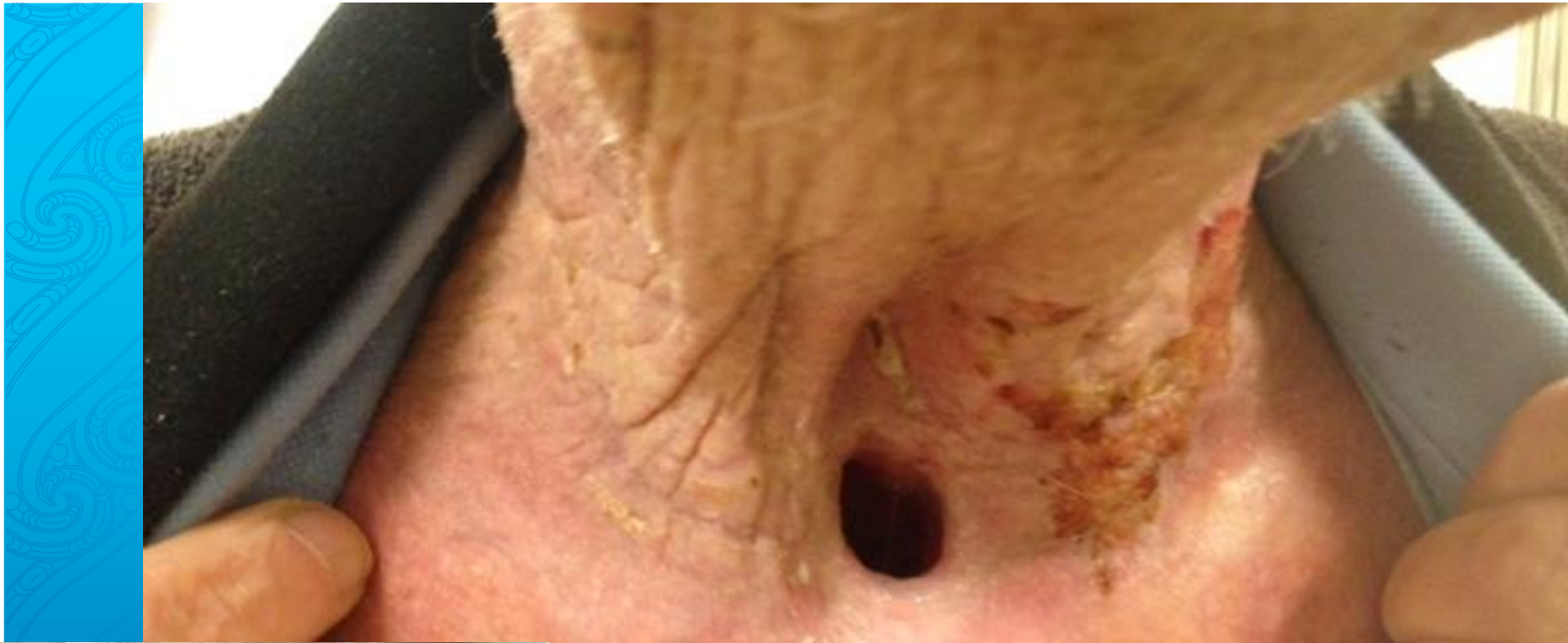




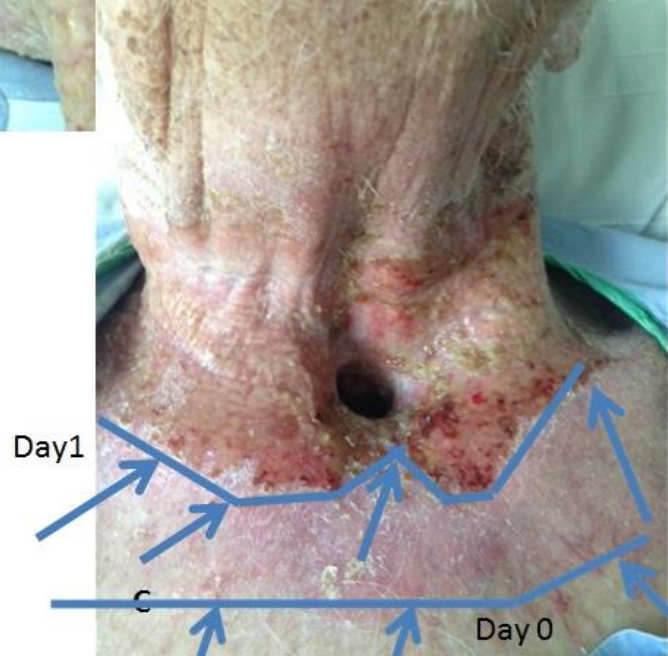
A & B- prior to commencing microdacyn hydrogel
13/04/2016

C – 14/04/2016 – a day after treatment

Microdacyn hydrogel spray 4x a day
Post op Radiotherapy burns



Day 15





Topical hypochlorite ameliorates NF- κ B-mediated skin diseases in mice

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Nuclear factor- κ B (NF- κ B) regulates cellular responses to inflammation and aging, and alterations in NF- κ B signaling underlie the pathogenesis of multiple human diseases. Effective clinical therapeutics targeting this pathway remain unavailable. In primary human keratinocytes, we found that hypochlorite (HOCl) reversibly inhibited the expression of *CCL2* and *SOD2*, two NF- κ B-dependent genes. In cultured cells, HOCl inhibited the activity of inhibitor of NF- κ B kinase (IKK), a key regulator of NF- κ B activation, by oxidizing cysteine residues Cys114 and Cys115. In NF- κ B reporter mice, topical HOCl reduced LPS-induced NF- κ B signaling in skin. We further evaluated topical HOCl use in two mouse models of NF- κ B-driven epidermal disease. For mice with acute radiation dermatitis, topical HOCl inhibited the expression of NF- κ B-dependent genes, decreased disease severity, and prevented skin ulceration. In aged mice, topical HOCl attenuated age-dependent production of p16^{INK4a} and expression of the DNA repair gene *Rad50*. Additionally, skin of aged HOCl-treated mice acquired enhanced epidermal thickness and proliferation, comparable to skin in juvenile animals. These data suggest that topical HOCl reduces NF- κ B-mediated epidermal pathology in radiation dermatitis and skin aging through IKK modulation and motivate the exploration of HOCl use for clinical aims.

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