H2O's Healing Touch
Chronic wounds now find a cure, courtesy Microcyn

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A solution of water and salt electrochemically charged in a way that can kill most bacteria, virus, fungi, spores and their ilk sans the toxic effects of traditional disinfectants and antiseptics? It may be hard to believe, it was even for doctors initially testing it, but the super-oxygenated water can heal chronic wounds like diabetic foot ulcers and burns. Dr Amar Pal Singh Suri, podiatrist at the Diabetic Foot Care Clinic in New Delhi and the only doctor running clinical trials in India, says the diabetic foot ulcers are healing for the first time ever.

Developed by California-based Oculus Innovative Sciences, Microcyn, as the oxidised water is called, has already been approved as a disinfectant and antiseptic for wound care in the US, Europe, Mexico and Canada.

"It will be a wonder cure for wounds that lead to amputation," says Dr Suri

Though Dr Suri initiated the Delhi trial on his own after he learnt about the technology at a conference in Germany last year, Oculus says it's working with prospective distributors in India to get regulatory approval from the health ministry.

Microcyn's technology is based on the chemistry of oxidation.
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When electric current is passed through purified water, the hydrogen and oxygen atoms in a water molecule are split into positively charged hydrogen ion and negatively charged hydroxide ion. Since the ions are no more stable, they look out for electrons that can stabilise them. The resulting solution—highly oxidised water which looks, smells and tastes like water—is a potent killer for single-celled organisms like bacteria, virus and other micro-organisms otherwise lethal for humans and their environs. When this solution comes in contact with micro-organisms, its highly concentrated ions want to rush inside the bacterial cell wall where the ion concentration is less (via osmosis), thereby rupturing the bacterial cell membrane and killing the organism.

Oculus improved the research done in the early '90s by Japanese scientists trying to find a way to disinfect cooling water in nuclear reactors but who gave up their 12 years of work as they couldn't keep their salt and water solution effectively stable for more a few days. Iranian-American biologist Hoji Alimi bought the global licence for the technology for his company Oculus and spent a few million dollars refining the ionisation process. The new technology stabilises the ions and keeps the solution's pH level neutral, making it harmless to healthy tissues. Traditional super-oxidised water can remain effective only for a few hours but Microcyn has a shelf life of a year which Oculus says will increase to two years when it becomes widely available as a medical supply.

Doctors testing the solution on chronic wounds and burns are delighted. "I have tried this on more than 50 patients in last three months and I see amazing results. The horrific odour of decaying flesh in festering wounds goes in just one-two days and the wound starts healing. If it's successful, it will be a wonder therapy for millions who suffer from ulcers and have their limbs amputated," Dr Suri says. "More than a million foot and lower leg amputations occur in India costing immensely to the exchequer and human productivity," he adds. After six months of randomised blind clinical trials, Dr Suri will submit his results before icmr to initiate the regulatory approval process.

Will this easy-to-apply-and-handle treatment come cheap? "We realise 'tier' pricing is appropriate with the product costing less in developing countries," says Oculus. As of now, Microcyn is more widely used in ulcer treatment but is equally effective in burns and dental application. "While the core technology is the same, we'll customise each formula to make it most effective in that particular application. Reactive oxygen species, various ions and even chlorine levels will vary," says Oculus. It may be a little early for Indian hospitals to offer Microcyn as treatment but it's promise is immense.
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