Buzz builds for honey treatments

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A bee keeper tends his precious stock. Credit: Comvita NZ Ltd.

Researchers are racing against the clock to find a viable alternative to traditional antibiotics, as bacteria continues to build resistance against new drugs at a frightening rate.

The field of chronic wound management illustrates the growing crisis. As antibiotic resistance becomes increasingly widespread, effective treatments for stubborn and slow-healing sores are becoming harder to find.

Enter manuka honey, a natural product derived from the Leptospermum scoparium plant that has unique healing properties. New research from the ithree institute at UTS shows manuka is the most effective type of honey for the treatment of these chronic wounds.

UTS Professor Elizabeth Harry, who led the study in collaboration with Comvita, a New Zealand-based supplier of medicinal honey, says the research suggests nature may hold the answers to a range of ailments.

The research team looked at two ingredients of honey known to inhibit bacterial growth: methylglyoxal (MGO), which is present at high concentrations in manuka honey, and hydrogen peroxide, which is present in many honeys at varying concentrations, including manuka.

"Honey is naturally inhospitable to bacteria as it contains a complex mixture of antibiotic-like chemicals," Professor Harry says.

"It's an excellent example of how years of evolution in making honey can provide an effective, long-term medical solution," she says. "Bacteria now have a finely honed ability to build resistance to traditional antibiotics, but are unable to do the same with honey."

The manuka honeys were the most effective at inhibiting growth of all four types of bacteria the researchers tested, she says.

"Interestingly, the MGO level alone can't explain the variation in the effects we saw," she says. "The key to the effectiveness of honey is its chemical complexity – it contains several chemicals that inhibit bacterial growth, not just MGO."

However, the potential benefits of alternative therapies such as manuka honey continue to be ignored by many medical practitioners for a number of reasons, including a lack of funding for clinical trials of such

therapies.

"Many clinicians are wary of complementary treatments because of a lack of evidence supporting their use, and because it flies in the face of their clinical training," says Dr David Johnson, director of Metro South and Ipswich Nephrology & Transplant Services (MINTS) and the medical director of Queensland Renal Transplant Service.

"There's a negative bias among a lot of clinicians … It's probably because it's outside of what they're generally used to – it's not within the usual conventional realm of medical thinking."

Dr Johnson uses Comvita's Medihoney products to treat device-related infections – those linked to the use of medical equipment. He made the switch from traditional antibiotic treatments after conducting a trial to gauge the efficacy of Medihoney on his kidney dialysis patients' catheter wounds. The trial showed the honey treatment was effective, affordable and well tolerated by the patients.

"Most importantly, it wasn't associated with promotion of resistant bacterial strains," he says.

While Dr Johnson hasn't embraced complementary medicines entirely, he says there are valid reasons for clinicians to remain open to the possibilities of natural products such as manuka honey, olive leaf extract, fish oil and Cordyceps sinensis, a fungus believed to protect the kidneys.

"There are biologically plausible mechanisms for why they might be beneficial, so I think it's worth exploring those things," he says. "What I'd like to see is more trials being done in the area to confirm their safety and efficacy."

Professor Harry agrees, saying natural therapies have a lot to offer but

have needed better science behind them to get clinicians on board.

"It's time to be open to alternative treatments that have had the stamp of approval by official regulatory bodies," she says.

Meanwhile, time to find an alternative for traditional antibiotics is rapidly running out.

"Antibiotic resistance is a bit like climate change – we can turn our eyes away from it, but at the end of the day it's there," Professor Harry says.

"What we need to do is decide to take action, and decide to be more open-minded about what's possible."

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