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The worsening Buruli ulcer epidemic – a role for BCG vaccination?

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A recent article by O'Brien et al. highlights the worsening epidemic of Buruli ulcer in Australia. The steep rise in both the incidence and severity of the disease is associated with estimated health-care costs of over \$2.5 million per year in Victoria.¹

The increase in Buruli ulcer cases in Australia parallels the increase in non-tuberculous mycobacterial (NTM) infections, especially lymphadenitis and Buruli ulcer, reported worldwide. Although this rise might be partly attributable to improved awareness and diagnostic methods, it might also be related to the discontinuation of universal Bacillus Calmette-Guérin (BCG) vaccination in settings where the rate of tuberculosis has declined. Routine vaccination with BCG through the school program was discontinued in Victoria in the mid 1980s.

The live-attenuated strain of *M. bovis* contained in BCG vaccine shares epitopes with NTM, which makes cross-protection plausible. Our recently published meta-analysis indicates that BCG vaccination has a protective effect against NTM.² In particular, two randomised trials provide strong evidence for protection against *M. ulcerans*.^{3,4} However, protection might only be short lived, as the highest protection was observed in the first year after vaccination. Nevertheless, studies also report that compared with BCG-naïve individuals, those who are BCG-vaccinated have smaller skin lesions⁴, a shorter duration to healing⁵ and protection against severe forms of Buruli ulcer with multiple skin lesions.⁶

Buruli ulcer is a serious condition, which, despite prolonged antibiotic treatment and surgical intervention, can lead to complications such as osteomyelitis and other crippling sequelae. In light of the worsening epidemic, the protective effect of BCG vaccination should not be overlooked.

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