

Long-term Effects of Snakebite After Four Years: A Cohort Study from Rural Sri Lanka

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BACKGROUND/OBJECTIVES: There is limited information on the long-term effects of snakebite globally. We aimed to describe the long-term effects of snakebite in a cohort of snakebite patients from Sri Lanka after four years.

METHODS: We previously recruited 733 snakebite patients at a tertiary centre in Sri Lanka (August 2013 to October 2014). Demographic, clinical and laboratory data were recorded prospectively at the time. Snake identification was by expert specimen identification or venom enzyme immunoassay. We attempted to contact all patients in the cohort 4 years later. Patients who responded were reviewed from August 2017 to October 2018. Patients had an interview, had a physical examination, a psychological assessment (using validated screening tools for depression, anxiety and post-traumatic stress disorder), and renal function investigation [serum creatinine, urinary albumin to creatinine ratio and estimated glomerular filtration rate (eGFR)]. Impaired renal function was defined as eGFR<60ml/min/1.73m² and/or urinary albumin-creatinine ratio>30mg Alb/gCr.

RESULTS: 199 (27%) patients (median age: 44yrs; 121 males) were followed up, including 93/247 Russell's viper (*Daboia russelii*), 49/150 Merrem's Hump-nosed viper (*Hypnale hypnale*), 12/32 Indian krait (*Bungarus caeruleus*), and 45/304 other snakebites. Mild pain, recurrent swelling and bite site numbness persisted in 27/142 patients with confirmed viperine bites, compared to 1/57 others. Two patients with *H. hypnale* and one *D. russelii* bite had permanent limb deformities. Unexplainable complaints like fatigue and, dental issues such as teeth falling out were reported by 62(44%) and 41(29%) viperine bites compared to 6(10%) and 2(3%) others respectively. No patient had depression, anxiety or post-traumatic stress disorder. Excluding patients with known renal impairment, hypertension and diabetes, 30/140(21%) envenomed bites and 1/23 (3%) other bites had impaired renal function (absolute difference 17%;95%CI:8-38%;p=0.08).

CONCLUSION: More patients with viperine bites had persisting local effects, medically unexplained symptoms and impaired renal function compared to non-viperine bites. No patients reported significant psychological sequelae.