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## The efficacy and safety of Botulinum toxin-A (BoNT-A) as a treatment for Trigeminal neuralgia: A literature review

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This review sought to explore the clinical applications of botulinum toxin (BoNT) within oral medicine in the management of classical, idiopathic and refractory TN. The efficacy and safety profile of BoNT injection therapy in TN patients were investigated. Trigeminal neuralgia (TN) is a chronic clinical condition characterized by paroxysmal attacks of extreme, sporadic, sudden burning or shock-like facial pain along the distribution of one or more branches of the trigeminal nerve (IHS Society, 2018)(Merskey and Bogduk, 1994). Due to the chronicity and tendency for recurrence using the available treatment options, newer methods are being trialled in search of a method of lasting pain relief with lowered potential risk factors. Botulinum toxin type-A (BoNT-A) injections are proposed to be a one such method for the treatment of TN. BoNT is a neurotoxin produced by the bacterium *Clostridium botulinum*, which exerts its effects by preventing the release of specific neurotransmitters from axonal endings at the neuromuscular junctions thus causing paralysis and pain relief. Currently, BoNT has an expanding range of medical applications for non-cosmetic head and neck conditions including indications for clinical use in oral medicine. This review evaluated whether current underpinning evidence is sufficient to herald the regulated use of botulinum toxin as a safe, affordable and beneficial alternative or adjunctive treatment of TN. Conclusively, this work found that BoNT therapy appears to be an effective and safe treatment option in TN patients for reduction of painful symptoms. The administration of BoNT via intradermal/submucosal injections or directly at the trigeminal nerve root, are effective treatment options for the reduction of pain intensity in TN patients. BoNT was also effective in the improvement of quality of life parameters such as frequency of painful paroxysms, sleep hours, quality of sleep and anxiety/depression. BoNT was also found to have a high safety profile with no severe or permanent adverse reactions reported for its short term use in trigeminal neuralgia in the current available research.

### Biography

Simone Adanah Sealy has completed her DDS at the age of 24 years from the Howard University BS/DDS accelerated program and her M.Sc from the University of Bristol. She is currently in an internship at Boston University OMS.