

Effects of botulinum toxin injection on systemic sclerosis-related digital ulcer

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Introduction: Vasoconstriction caused by paradoxical vascular responses is thought to underlie systemic sclerosis (SSc)-related digital ulcer (DU). Recently, botulinum toxin (BTX) injection has emerged as a chemical sympathectomy. Updated guidelines indicate that BTX injection is a treatment option for severe and refractory Raynaud phenomenon and SSc-related DU. **Case 1:** 62-year-old female presented with painful DU. She was diagnosed with diffuse cutaneous SSc 10 months prior. As the DU pain was uncontrolled, we injected BTX-type A (10 IU of Meditoxin® in 0.5 mL saline) subcutaneously into the palm, just proximal to the A1 pulley of the left second finger (Fig. 1A). Initially, the fingertip ulcer was 5×4 mm in area, with dark pigmentation (Fig. 1B). After additional injections 4 and 5 weeks later, significant improvements were evident (Fig. 1C, 1D). **Case 2:** 50-year-old female was taking endothelin receptor antagonist to treat the recurrent active DU. At the first visit, a deep ulceration 3×3 mm in area was evident. We injected BTX-type A as described above for case 1. Four days later, the ulcer had improved, but another ulcer had developed. We administered further BTX injections 7 and 8 weeks after the first injection. Although there was transient exacerbation of the DU caused by wound infection, gradual improvements were evident (Fig. 2). **Discussion:** BTX injection is considered as a possible alternative therapy for SSc-related DU that inhibits the release of acetylcholine and blocks the transmission of the norepinephrine vesicle at the sympathetic nerve fiber, preventing vascular smooth muscle contraction. BTX may also inhibit endothelial exocytosis of endothelin-1 and increase the activity of nitric oxide. Our patients exhibited improvements in refractory DU lesions after serial BTX injections, but more data are required to verify the efficacy and to determine the optimal dose and injection frequency of BTX.

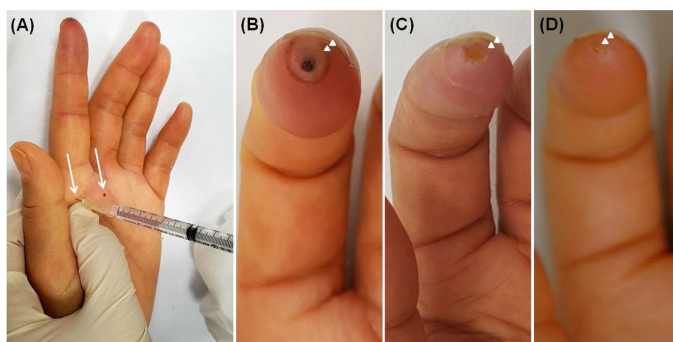


Figure 1. Botulinum toxin injection, and serial photographs of the digital ulcer.

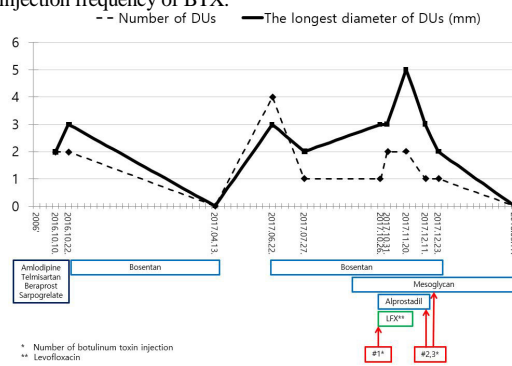


Figure 2. Graph describing the change of number and the longest diameter of digital ulcer (DUs) by time, with medical treatment history below.

Epidemiology of gout in South Korea with the National Health Insurance Corporation Database

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Background/Aims: Gout is the most common inflammatory arthritis that results from chronic elevation of uric acid levels above the saturation point for monosodium urate crystal formation. However, data on gout incidence, prevalence and management, are sparse, especially in Korean populations. We reevaluated the recent prevalence and incidence of gout in Korean people after our previous study in 2011 (1). **Methods:** The National Health Insurance Corporation (NHIC) Database was used to identify patients with gout. We selected the gout patients who were coded as having gout (KCD M10.0) from main diagnosis to 4th additional diagnosis. And we estimated the prevalence (from 2002 to 2015) and the incidence (from 2006 to 2015) for each calendar year. **Results:** Prevalence of gout was 0.39% in 2002 and 2.00% in 2015. There was a 5.17 fold increased during over 13 years. Prevalence have increased at all ages, especially at the age of 80 and over. Also, incidence per 100,000 was 361 in 2006 and 797 in 2015, there was 2.21 fold increased during over 10 years. Sex ratio (male:female) was 3.0~3.8:1. When monthly incidence was examined, except for December, it increased as the day warmed and peaked in July and August. In the southern provinces, especially Busan, prevalence and incidence were high. Of those diagnosed with gout in 2012, a total of 30% of those who had been prescribed uric acid lowering agent (allopurinol or febuxostat or benzbromarone) within three years. **Conclusions:** In Korea, prevalence and incidence of gout are rapidly increasing. Incidence was higher for males, for older age, for warmer days, and for southern regions. Management of gout in Korea is poor, with only three in ten affected people who have ever been treated with uric acid lowering therapy.

Table 1 Gout prevalence per 100,000 people per year and the gender ratio in 2002-2015

year	Prevalence per 100,000			Sex ratio
	total	male	female	
2002	388	588	193	3.0
2003	491	745	244	3.1
2004	569	876	270	3.2
2005	655	1,020	300	3.4
2006	743	1,169	326	3.6
2007	817	1,301	344	3.8
2008	918	1,460	389	3.8
2009	1,009	1,609	424	3.8
2010	1,143	1,813	490	3.7
2011	1,259	1,989	547	3.6
2012	1,428	2,223	653	3.4
2013	1,656	2,500	833	3.0
2014	1,801	2,727	899	3.0
2015	2,005	3,026	1,009	3.0