To assess whether sacral nerve stimulation (SNS) is superior to botulinum toxin A (Botox-A) in the refractory overactive bladder (OAB).

Key words were searched in: PubMed, EMBASE and Cochrane library with “Botulinum Toxin A”, “botulinum type A toxin”, “Onabotulinumtoxin A”, “Sacral nerve stimulation”, “Sacral neuromodulation”, and “refractory overactive bladder”. Randomized and nonrandomized controlled trials evaluating all women who underwent SNS and Botox-A injection were included. A data extraction tool was used for data collection. The outcomes, side effects and cost-effectiveness value of both procedures was compared in meta-analysis.

3 studies with 853 patients evaluate the effectiveness and safety, the results indicated women with refractory OAB receiving SNS had similar improvement in OAB symptoms with Botox-A injection [risk ratio(RR)0.88, 95% CI 0.63-1.23].

Fig 1. Three trails enrolling 628 patients ( SNS group=308 ; Botox-A group=320 ) reported the changes in OAB symptoms after SNS intervention. The results indicated women with refractory OAB receiving SNS gained similar improvement in OAB symptoms with botulinum toxin A (Botox) injection [risk ratio(RR)0.88, 95% CI 0.63-1.23].

Fig 2. Three trials enrolling 628 patients ( SNS group=303 ; Botox-A group=325 ) reported the changes in OAB symptoms after SNS intervention. There was no significant difference in failure rate between Botox-A group and SNS group [risk ratio(RR)1.10, 95% CI 0.79-1.55].

But, the complication rate, such as urinary tract infection, was lower in SNS group than in Botox-A group [risk ratio(RR)3.65, 95% CI 2.57-5.18].

3 studies assess and compare the costs and effects value of either procedure from a societal perspective. The result showed that SNS is costeffective after 5 years and 10 years compared to Botox-A.

Compared with Botox-A, SNM is the superior choice for refractory OAB based on the same efficacy, lower complications and better cost-effectiveness. However, clinical decision making is still complex and exciting task for doctors, and more studies with large sample and long-term is still needed.

Fig 3. Three trials with total of 771 patients ( SNS group=328 ; Botox-A group=389 ) reported the complication after these two treatment. The pooled results showed significantly lower complication rate (urinary tract infection) of after SNS than Botox-A [risk ratio(RR)3.65, 95% CI 2.57-5.18].