Abstract
This study was to evaluate the three system of sling surgery and further compared the outcomes post-operation.
We recruited patients from single medical center, since July 01, 2015 to June 30, 2018. We randomized patients into three different trial group, sling surgery with Solyx, Ophira or Needleless. We included patients with severe stress urinary incontinence. The primary outcome was cure rate after half a year follow. The secondary outcome was postoperative complications. Our study showed that three kit have similar cure rate. However, none anchor kit system have less complications after six months followed-up.

Introduction
The prevalence of urinary incontinence in women aged more than 60 years old was 29.8%, which has drawn attention recently. Single incision sling surgery is the mainstream for surgical intervention of urinary stress incontinence. However, there are no systemic trial to compare sling surgery with different kits. Therefore, the aim of this study was to evaluate the three system of sling surgery and further compared the outcomes post-operation.

Methods and Materials
• Study design and patients enrollment
We recruited patients from single medical center, since July 01, 2015 to June 30, 2018. We randomized patients into three different trial group, sling surgery with Solyx, Ophira or Needleless. We included patients with severe stress urinary incontinence. In addition, we excluded patients’ with mixed urinary incontinence, overactive bladder or pad test less than 10 gram.
• Sling system
Solyx™ SIS System
The Solyx sling (Boston Scientific Corp; Natick, MA, USA) contains nonabsorbable polypropylene mesh and mesh carrier. It is 9 cm in length, which is available to place the mesh in the obturator muscle tissue, but not perforate retropubic space.
Ophira
The Ophira mini-sling system (Promedon; Cordoba, Argentina) contains anchors and low-tension tape. It is placed to obturator internus muscles bilaterally.
Contasure-Needleless System
The Contasure-Needleless System (Neomedic International) contains mesh without anchor. We use surgical forceps to place the mesh through a single vaginal incision at the internal obturator muscle.
• Results
The primary outcome was cure rate after half a year follow. The secondary outcome was postoperative complications.
• Statistical analysis
The analysis was performed using the Student's T-test, and univariate logistic regression. Analyses were performed with the use of SAS statistical software, version 9.2 (SAS Institute). The significant level was 0.05.
• Ethical Considerations
This study was approved by the Institutional Review Board of our hospital.

Results
Table 1 demonstrated the demographic data in patients underwent sling surgery with different kits. We found that Cure rate after one-year follow up and patient complain during first visit seems that anchor kit system is better than needleless system. However, VD and de novo OAB are not seen in needleless system.

Discussion
Our study showed that three kit have similar cure rate. However, none anchor kit system have less complications after six months followed-up. This is the first study to compare these three different kits in sling surgery. We found that none anchor kit system may result in postoperative urine leaking after visit, but it would not cause difficulty in voiding. Tissue regeneration plays an important role in this finding. One research established that an appropriate level of post-implantation acute inflammation is important to precipitate moderate fibrosis. It strengthens the power of mesh.

Conclusions
• Initial results showed sling kit with anchor fix will prone to be VD instead Needleless kit have obviously urine leak out but subsided after 6 months.
• It is mandatory to monitor more population and longer timeframe to get accurate information

References
Hsieh, C. H. et al., Risk factors for urinary incontinence in Taiwanese women aged 60 or over.
Lo TS, et al., Evaluation of Clinical Outcome and Risk Factors for Failure of Single-incision Midurethral Short Tape Procedure (Solyx Tape) for Stress Urinary Incontinence.
Chapple CR, et al., Application of Tissue Engineering to Pelvic Organ Prolapse and Stress Urinary Incontinence.