

## DEVELOPMENT AND REVIEW OF NEW APPLICATION OF BLADDER DIARY AND SYMPTOM SCORES WITH DATA ACCESSIBLE THROUGH THE INTERNET IN ANDROID (TS-MEDIC)

### Hypothesis / aims of study

A bladder diary is a useful tool to diagnose lower urinary tract (LUT) function. However, there are some problems regarding difficulty of evaluation in OAB severity and patient's quality of life (QOL) as well as spending time in medical staff to evaluate data. Currently, we developed a new application (TS-MEDIC, Figure 1) that includes a bladder diary with automatic calculation and self-review symptoms scores for android. In this application, we can access data through the Internet in real-time. In the present study, we evaluated availability of TS-MEDIC after patient's use based on a questionnaire survey.

### Study design, materials and methods

In this application, each patient initially applies self-registration (interim registration) through the Internet. After patient's registration, registered medical staff for this application can obtain data of each patient to access the server database through the Internet and analyse data before patient's visit to clinic. Data analysis is conducted automatically after the patient input regarding voiding information (with or without urge to void, urge to urinate and incontinence, trigger, and voided volume), information of fluid intake (kinds of fluid, intake of volumes of fluid), awake time, and time of sleep. In self-review of symptom scores, patients answer questions of international prostate symptom score, QOL score and overactive bladder symptom score. Then, patients can know their symptom scores and degree of severity. In addition to TS-Medic, a handwritten bladder diary was also performed to compare usefulness.

### Results

Thirty-six male patients, who under took robot-assisted radical prostatectomy, enrolled present study for trial use (mean age: 69.83 years old). Of 36 patients, 21 patients finally answered a questionnaire regarding TS-Medic. Of 21 patients, 7 patients had experience of tablet computer use. Trial periods of application use were for 3-10 days.

In patients with  $\geq 70$  years old, a handwritten bladder diary was more useful than TS-MEDIC. In patients with  $< 70$  years old, however, TS-MEDIC was more useful than a handwritten bladder diary. In addition, the patients, who have experience of tablet use, felt that TS-MEDIC was more useful than a handwritten bladder diary (Figure 2).

### Interpretation of results

For patients with  $\geq 70$  years old, it was not easy to use TS-MEDIC, which may be derived from less experience of tablet. On the other hand, people with  $< 70$  years old, particularly who had experience of tablet use, felt easier to use TS-MEDIC compared to a handwritten bladder diary. From the present data, to spread this application, we need to modify TS-MEDIC for all generations to use it easier and educate patients for tablet use before use of TS-MEDIC.

### Concluding message

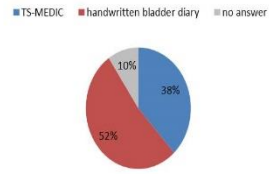
TS-MEDIC has a potential to be a useful tool for evaluation of bladder diary and LUT symptoms. We will make improvement to make patients with more than 70 years old use TS-MEDIC easier.

Figure 1

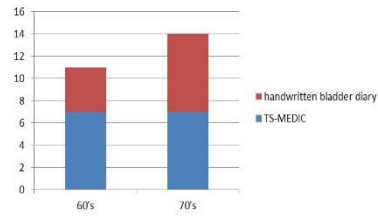


Figure 2

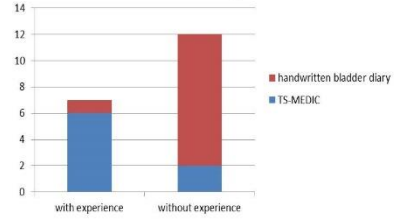
**Which is preferred TS-MEDIC or handwritten bladder diary?**



**breakdown of ages**



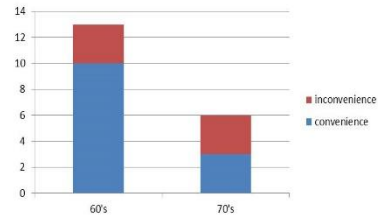
**with or without use experience of tablet**



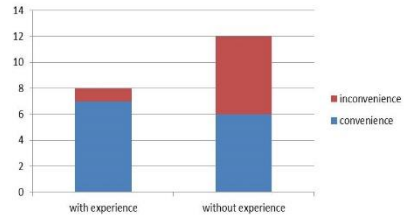
**Is TS-MEDIC convinience?**



**breakdown of ages**



**with or without use experience of tablet**



Disclosures

**Funding:** I have no financial relationships to disclose. **Clinical Trial:** Yes **Public Registry:** No **RCT:** No **Subjects:** HUMAN **Ethics Committee:** the Yamanashi University ethic committee **Helsinki:** Yes **Informed Consent:** Yes