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Development of neuro-endovascular therapy report system using mobile terminals

Nobuyuki Sakai, M.D., D.M.Sc.

Vice-president of hospital, Director of Neurosurgery and Comprehensive Stroke Center, Kobe City Medical Center General Hospital

Background

We always need to create and save medical records (endovascular treatment report, procedural report), when we performed medical procedures. On the other hand, it's common to repeatedly register same content and data in various clinical studies.

We have been involved in many multicenter studies, and have been conducting clinical studies, JR-NET (Japanese Registry of Neuro Endovascular Therapy) since 2005, have exceeded over 70,000 cases. The results have been published in more than 30 English publications and are used as a benchmark for perioperative results of endovascular treatment in Japan. In JR-NET, it was necessary to fill-in medical records and information in a separately created database of the WEB based record system, and it took a lot of effort to register the used medical devices.

Purpose of research

Establish and operate of neuro-endovascular therapy recording system that utilizes mobile terminals so that medical records can be used to create a database related to neuro-endovascular treatment and data registration in clinical research.

Method and results

We planned to build a WEB registration system on mobile terminals such as iPads and smartphones. This input system has a function of reading a bar-code of a medical device and automatically collecting information on the used medical device by using the camera function of the mobile terminal. When the cerebrovascular treatment recording system utilizing this mobile terminal is completed, it can be used as a medical record, and it will be possible to smoothly create a database on treatment and input clinical research record form.

- 1) Request cooperation from medical device industry to comprehensively collect bar-codes of medical devices used in neuro-endovascular treatment, and secure support companies to prepare the information necessary for the operation of this system.
- 2) Operate a registration system developed on the WEB, read the bar-code using the camera function of the mobile terminal, and automatically register the used medical device in the database.
- 3) Information such as patient background, diagnosis, treatment, results, and outcomes is also registered in the database, but since the registration system deployed on mobile terminals is

used, there is no delay in various places including the treatment site. It will be possible to proceed with registration.

4) Develop a function to output the input data in a self-made format so that it can be used for medical records, various databases, and clinical study in each institute. If used as a standard endovascular treatment record or surgical record at multiple facilities, it will become easy utilization for multi-center clinical study.

5) This system work stable and save time and labor for recording neuro-endovascular treatment and patient's information in our preliminary test.

Conclusions

We establish WEB based electrical data registration system on mobile terminals of neuro-endovascular treatment. It helps standardize of treatment record system and save labor of medical stuff, and contributes to the development of multi-center clinical research.