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Development of Dialysis Patient Exercise Therapy Support System II -Trial Production of Function to Promote Continuation of Exercise Therapy-

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Objectives : We are establishing a support system for dialysis patients to encourage participation in regular exercise. As described in "Development of Dialysis Patient Exercise Therapy Support System I", we proposed adding a function that encourages the patient to exercise continuously on both dialysis and non-dialysis days. Here, we present the results of trials conducted based on these proposals.
Methods : We added a "reward" feature to the constructed system to encourage patients to engage in continuous exercise. For this purpose, we developed a unique Ergo-storage device capable of converting the rotational energy from the ergometer into electrical energy, which can be stored and used to charge mobile devices. In addition, we established the capability to send and receive exercise data and vital information, as well as dialysis and dietary records specific to each patient, in the existing system, facilitating seamless coordination within medical institutions.
Results : In the developed dialysis patient support system, the patient could use the Ergo-storage device to successfully charge the connected device. Furthermore, we were able to transmit the exercise data to the existing system and link it to the individual medical information of each patient. As a result, medical institutions could now access detailed information on the exercise of each dialysis patient, along with their personal medical records. Figs. 1 and 2 show examples of patient-side and institute-side displays, respectively. In addition, graphing the numerical data of these exercise levels provided at-a-glance comprehension of the temporal changes in a patient's medical information.
Conclusions : We added a "reward" feature to the existing dialysis patient support system, supporting exercise for dialysis patients regardless of location or dialysis status. The reward feature enables the charging of electronic devices for dialysis patients. Acknowledgment This research was supported in part by Gakushin Kaken (JP20H03982).

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Fig. 1 Patient side display in the developed dialysis support system with the exercise function

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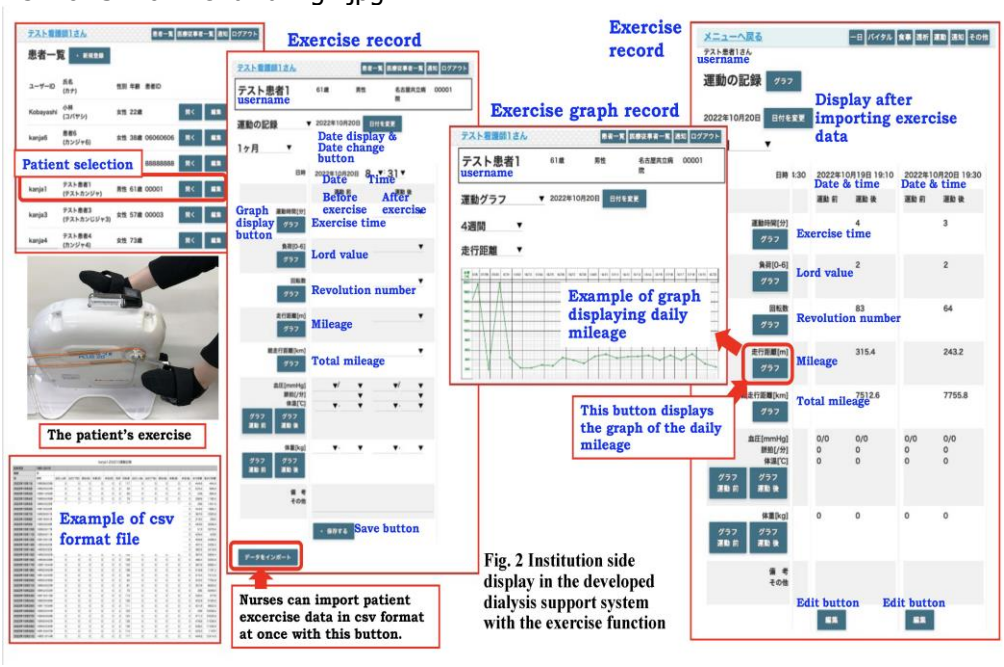

Fig. 2 Institution side display in the developed dialysis support system with the exercise function