Self-monitoring creatinine after kidney transplantation: adherence to measurement protocol and reliability of patient reported data.

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Background: Through self-monitoring creatinine after kidney transplantation, the high number of outpatient visits could be reduced. The current study used data from a self-management RCT to investigate whether it is safe to rely on patients' reported self-measurements.

Methods: During one year after transplantation 54 patients self-measured their creatinine and registered the values in an online Self-Management Support System (SMSS) that provided automatic feedback (e.g. contact hospital). Adherence to the self-monitoring protocol was determined by comparing number of requested with number of performed measurements. Reliability was studied by comparing dates and values that were registered in the SMSS and logged in the creatinine device. To determine adherence to the provided feedback, SMSS logged actions and information from the electronic hospital files were analysed.

Results: Level of adherence was highest during week 5-15 post-transplantation with over 90% of patients performing >75% of the requested measurements. Ninety percent of all registered creatinine values was entered correctly, although values were often registered several days later. If more measurements were performed than values were registered (10%), the registered values were significantly lower than the unregistered ($p < .05$) suggesting selection of lower creatinine values. Adherence to SMSS generated feedback ranged from 53-85% depending on the specific feedback.

Discussion: The majority of self-measured creatinine values were registered accurately. Although self-monitoring of creatinine does help to identify kidney rejection early (data will be submitted for publication separately) there is a concern about patients tending to postpone registration of measurements, select reassuring (i.e. lower) creatinine values for registration and non-adhere to the feedback provided by the SMSS. These issues can mostly be overcome by transferring measured data automatically.