POSTER ABSTRACT

Impact of mHealth in Heart Transplant Management (mHeart).

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Introduction: Non-adherence to immunosuppressive medications following organ transplant ranges from 20-40% and is associated with episodes of acute rejection and graft loss. Focused on improving outcomes and safety associated with drug therapy, many solid organ transplant centres incorporate transplant pharmacists into the multidisciplinary transplant clinical team.

To improve patient empowerment and adherence to treatment, pharmacist and other clinicians seek new tools such as mobile Health (mHealth). Mobile technology has undergone rapid advances in recent years and could help manage chronic patients remotely. Several mobile applications have been designed to improve adherence but evidence supporting their benefits in clinical practice is limited.

We have designed a new pharmaceutical care programme supported by mobile health (mHealth) for use in heart transplant recipients. This study aims to analyse the potential of mHealth to improve adherence to medication following heart transplant in real clinical practice. The secondary objectives are to validate a new mHealth application and to evaluate drug-related problems and clinical events, practical barriers to adherence, patient quality of life and satisfaction, and reductions in healthcare costs.

Methods: We are performing a single-centre, interventional, parallel two- arm, open-label, randomized study.

The inclusion criteria are: heart transplant patients of either gender ≥ 18 years and at least 18 months post-transplant; and mobile device users. All patients gave informed consent and the intervention group signed a confidentiality agreement.

We will need to include 136 patients to achieve an improvement of 25% in adherence to immunosuppression treatment.

Medication adherence will be measured using immunosuppressive blood levels and data from clinical interviews, validated adherence scales, dispensing medication rates and self-reported mHealth medication. Using validated scales, we will measure stress, anxiety, depression, interpersonal support, use of the new technologies, and quality of life and satisfaction with the programme.

The patients will be randomized to the intervention group using the pharmaceutical care programme supported by the multidisciplinary team and the mHealth application, or to the control group who will receive routine healthcare by the transplant team. All patients will be followed up for 12 months.

The experimental group will receive intensive pharmaceutical follow-up programme, including pharmaceutical visits each six months and an online health platform for remote monitoring. This new follow-up is integrated into the multidisciplinary team workflow through weekly clinical sessions to discuss new clinical date. Analysis of the data collected may help to prioritise and provide personalized pharmacotherapeutic and medical interventions to patients and their families.

Patients will use the mobile application to manage their health issues and facilitate communication with the transplant team. Data recorded manually by the patient using the mHealth application include pharmacotherapeutic information, clinical symptoms and other relevant clinical information

Progress Report: Patient recruitment commenced in October 2015 and 26 patients have already been admitted to this new programme. We hope to complete recruitment in December and to continue follow up for 12 months.

To date 4 patients of 30 patients have been excluded from the study: three due to inability to use a mobile device (smartphone) and one with a severe mental disorder.

Discussion: In view of the possibly limitations in the use of the new mHealth technology by some patients, we calculated the sample considering a 10% loss of recruitment.

The mHealth application developed could be a useful tool to detect early non-adherence, analyse attitudes to therapy, identify drug-related problems, and detect clinical events in order to prioritise patients needing personalized pharmacotherapeutic interventions.

We expects to improve medication adherence, patient engagement and informational and social support to heart transplant patients.

If the results are positive for the heart transplant patient and the healthcare system, we plan to integrate this mHealth follow-up programme into daily pharmacy activities. Moreover, we plan to adapt the programme for use in other chronic diseases as a way to improve pharmacy practice.

Conclusion: Evidence supporting the use of mHealth in pharmaceutical care is limited. This study will analyse the potential of mHealth to improve healthcare and therapy management in real clinical practice in heart transplant patients.