

Feasibility & Impact of Telemonitoring on correct drug Use, complications, and quality of life among patients with Multiple Myeloma (MM). (F-ITUMM-trial)

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INTRODUCTION

Multiple myeloma (MM) – uncontrolled division of malignant plasma cells in bone marrow tissue – is the second most prevalent hematological malignancy in the world.[1,2]The complexity of the treatment regimens requires continuous effort and attention from patients, when taking (oral) medication. [3]This in particular given the higher ages, higher levels of frailty and disability of MM patients if compared with other types of cancer patients. This study aims to investigate the feasibility of applying a newly developed MM e-coach with an integrated medication module. Patient & healthcare professional experience are explicitly included for further development.

Time schedule

- From September 2019 to June 2020 the e-coach MM was developed
- The 15th of June 2020 the F-ITUMM trial was started in Isala

MATERIAL AND METHODS

This study was designed as a single center trial that aimed to include 20 patients. At the start and week 8, all patients received a system usability scale (SUS) form. Also, monitoring of patient reported outcomes (PRO) was done based on measurements at time of inclusion as well as week 8. [5] E-coach experiences of health care professionals (n=5) were measured and summarized with the following items: ease of use, user satisfaction, functionality, time efficiency, patient feedback, diversity and technical complaints.[4,5]

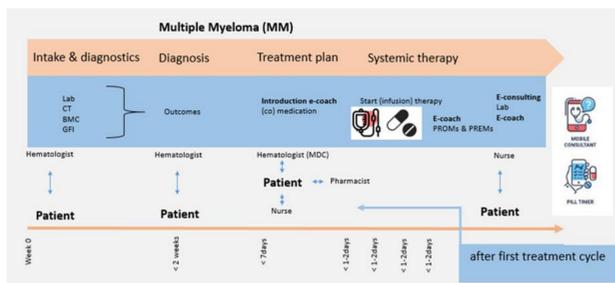


Figure 1. New clinical care pathway for multiple myeloma in Isala, the Netherlands. Designed with an innovative perspective, "care at home and if necessary in the hospital". Lab: laboratory results: M-protein, hemoglobin, urine, kidney function, cytogenetics; CT: computed tomography; BMC: bone marrow centesis; GFI: Groninger frailty index; MDC: multidisciplinary consultation; PROMs: patient reported outcomes measures PREMs: patient reported experiences measures

Inclusion

- 20 patients selected and actively approached
- 18 definitively starts after registration on the e-coach
- Of the 18 patients, 2 died (after the 8 weeks of this study)

RESULTS



Figure 2. 18 patients have been included in this pilot study. At start (t = 0) and after 8 weeks of use (t = 1) the EORTC-30 (Quality of Life, score 0-100), MARS-5 (self-reported medication adherence scale, score 0-25) are digital asked. In the meantime, the patient works with the different e-modules (consultation/advice/information/medication) in the e-coach.

Based on applying dynamic implementation of the MM e-coach, SUS results improved and specific outcomes for communication, medication intake and side effect management, resulted in lower treatment related adverse events. Furthermore, we identified potential for improvement in the quality of MM care by sufficient patient preparation and implementation of a (digital) e-consult as part of a multi-component intervention strategy. Quality of Life and medication adherence (Figure 2) Patients score on average higher on the EORTC from baseline after 8 weeks with a mean of 71.88 (SD: 20.76) versus 69.71 (SD: 16.15) at t=0. The MARS-5 scores are very high at the start (24.35) and after 8 weeks it is also minimally increased (24.44).

Usability (Figure 3) At baseline, patients have good expectations of the e-coach (T = 0: SUS 69.13: SD 13.45). Although reduced after 8 weeks, satisfaction is still high (T = 1: SUS 62.65: SD 18.97) and patients provide good input for further development.

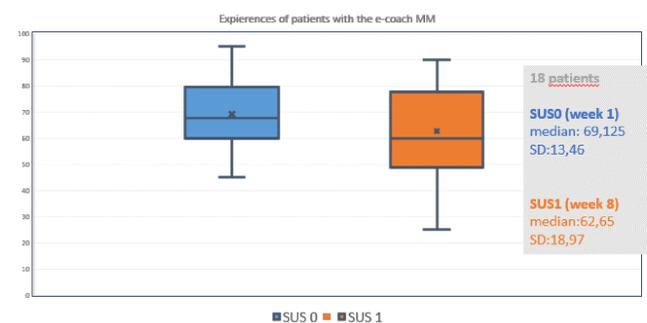


Figure 3. SUS questionnaire outcomes At start (t = 0) and after 8 weeks of use (t = 1) the SUS questionnaire (satisfaction, score 0-100, > 67 is sufficient; Bangor et al. 2008). In the meantime, the patient works with the different e-modules in the e-coach.

INTERVENTIONS

interventions in 8 weeks pilot

- Insight into patient fitness and neuropathy
- Referral via communication e-coach (no telephone contact)
- Based on the patients complaint/adverse event, prescribed supporting medication and monitoring the complaint
- Dormant urinary tract infection, being able to ask questions through complaints and prescribed medication
- Bowel obstruction signaling, act earlier on the basis of this complaint
- Follow up on dyspnea complaint

Interventions lead to

- Less time for referrals
- Insight into patient condition
- Quickly identify, monitor and act
- Shorter hospitalization

CONCLUSION

Patients are generally satisfied with the e-coach. 87,5% are willing to continue (n = 14 out of 16). Medication guidance (MARS-5) in this group is marked by bias and perhaps the high expectations of our pilot group. Age is not dependent on working with iPad/smartphone or computer.

Healthcare professionals are positive about the innovation within their profession. They described 13 concrete areas for improvement to really get this e-coach into regular healthcare. It provides a lot of insight for a pilot

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