

Background

- Adherence to medication is a major problem in chronic diseases. Mobile health applications can be used as a support tool and could enhance the empowerment of patients with chronic illness.

Aim

To assess a medication self-management platform, Medplan, in order to improve adherence and health outcomes in chronic hepatitis B virus (HBV) infected patients.

Methods



- A 6-month single-arm prospective pre-post intervention study was performed. It was approved by the ethics committee.
- Patients receiving treatment for chronic HBV infection were included. Informed consent was required.
- Participants were followed according to their usual care in the pre-intervention phase, and after 3-months, they used Medplan (intervention-phase).
- Medplan reminds patients to take their medications, provides drug information, is a patient-healthcare professional communication channel and provides an adherence registration tool.**
- Adherence and quality of life were determined using validated tools (simplified medication adherence questionnaire (**SMAQ**), proportion of days covered with medication (**PDC**) and EuroQol-5 Dimension (**EQ-5D**) questionnaire). HBV DNA pre- and post-intervention was collected. Medplan usefulness and patients' self-registered adherence were analyzed.

Results

- 82 patients were enrolled
- 36 patients (43,9%) withdraw from the study being the most common reasons: difficulties installing and using Medplan (n=9), technical issues (App does not work/reminders did not trigger, n=7) and unwillingness to use the app (n=4). Nine patients are still on the study.
- Study population comprises **37 patients** (Table 1)

Table 1

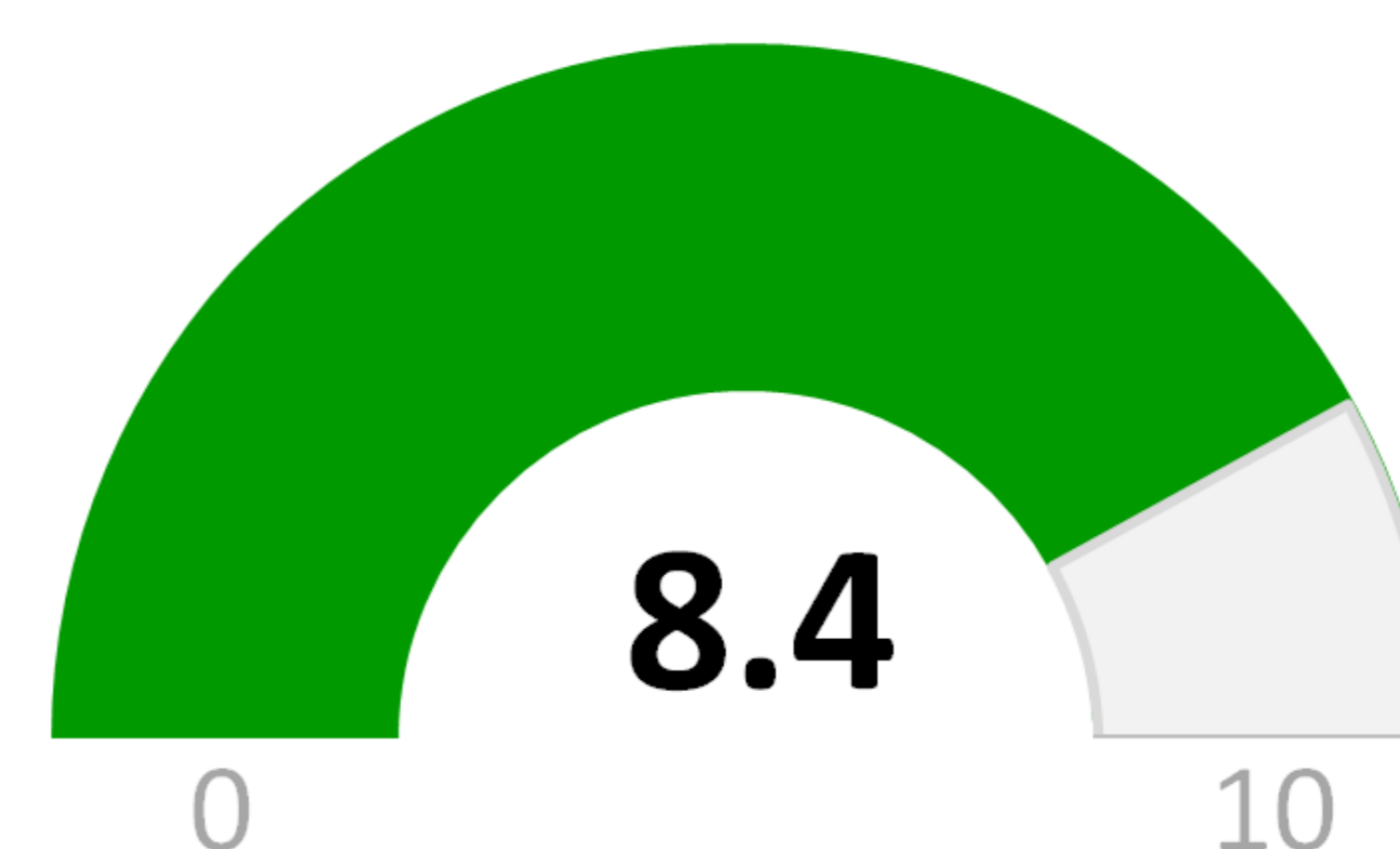
Baseline Characteristics	
Mean age, years ± SD	54±10
Men, n (%)	27 (73%)
Naïve, n (%)	1 (2.7%)
Education level, n (%)	
Primary education	12 (32.4%)
Secondary education	13 (35.1%)
University degree	11 (29.7%)
DK/NA	1 (2.7%)
Mobile operating system, n (%)	
Android	33 (89.2%)
iOS	4 (10.8%)
Antiviral medication, n (%)	
Tenofovir	25 (67.6%)
Entecavir	9 (24.3%)
Lamivudina	3 (8,1%)

- The major findings of this study are presented below (Table 2)

Table 2: Study outcomes	Pre-intervention	Post-intervention
Nº of adherent patients by SMAQ	20/37 (54,1%)	26/36* (72,2%)
Adherence by PDC	95.7 ± 12.4	98.7 ± 5
Mean adherence registered in Medplan	-	91,6 ± 13
Nº patients with undetectable HBV-DNA	17/37 (45,9%)	26/33** (78.8%)

*One patient did not answer the final questionnaire
** 3 results are pending

- No changes were found in mean quality of life
- Mean utility score was 8,4 out of 10 among patients



Conclusions

- Medplan platform could improve medication adherence and health outcomes for chronic HBV patients
- Technical problems must be solved in order to include more patients. Further studies are needed