Electronic patient reporting outcomes are a promising predictive factor of prostate cancer patient survival: The Protecty study

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Background

The benefits of Electronic Patient Remote Outcomes (e-PRO) for telemonitoring are well established, allowing early detection of illnesses and continuous monitoring of patients. We have previously shown high levels of compliance of use of telemonitoring in daily care (1-2).
This new PROTECTY study assesses the predictive power of patient health status in the first month of treatment on survival, evaluated with the telemonitoring platform Cureety.

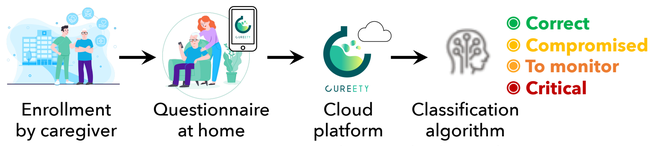

Figure 1. *Cancer patient care that includes telemonitoring.*

1. Helissey et al, J Clin Oncol 2021 39:15_suppl, 1581-1581
2. Meghiref et al., JMIR Cancer. 2021 Dec 8. doi:10.2196/31255

Patients & Methods

This prospective study was conducted at the Military Hospital Bégin on prostate cancer patients. Patients were allowed to respond to a symptomatology questionnaire based on CTCAE v.5.0, personalized to their pathology and treatment. An algorithm evaluated the patient status based on reported adverse events:

A ◉ Correct
B ◉ Compromised
Good health status

C ◉ To be monitored
D ◉ Critical State
Poor health status

For A/B (good health status), the patient received therapeutic advice to help manage each of the reported adverse events. For C/D (poor health status), the patient is invited to call the hospital.

For the purpose of this analysis, we determined the health status in the 1st month after initiation of treatment, which was classified as "**Good health**" (majority of A/B reports) or "**Poor health**" (majority of C/D reports). The primary endpoint was to assess if the first-month health status is a predictive factor of progression free-survival (PFS). The secondary endpoint was to assess if the first-month health status is a predictive factor of overall survival (OS).

Results

- 61 patients were enrolled between July 1st, 2020 and June 30st, 2021.
- The median age was 74.0 (range 58.0 – 94.0).
- 62% presented a metastatic stage, and the most represented cancer was mHSPC with 39.5% among metastatic patients.
- Overall, 2436 questionnaires were completed by the patients.
- 86.9% of patient were classified in group A the first month
- 13.1% of patient were classified in group B the first month.
- The median follow up was 12.3 months.
- PFS at 12 months was 89% in A group vs 60% in B group, p=0.17
- OS at 12 months was 100% in A group vs 86% in B group, p=0.15.

Variables	All patients
Number of patients N, (%)	61 (100)
Age (median, range)	74.0 (58.0 – 94.0)
Comorbidities N, (%)	48 (78.7)
Stage of prostate cancer N, (%)	
Localized	3 (5)
Rechute biologique HS	8 (13)
nmCRPC	9 (15)
mHSPC	18 (29)
mCRPC	23 (38)
Type of treatment N, (%)	
Chemotherapy	13 (21.3)
Hormonotherapy	46 (75.4)
Combined treatment	2 (3.3)
Stage at inclusion N, (%)	
Localized disease	13 (21.7)
Advanced disease	47 (78.3)
Clinical trial N, (%)	
No	37 (62.7)
Yes	22 (37.3)

Table 1. *Baseline characteristics of the patients.*

The authors declare that they have no conflict of interest

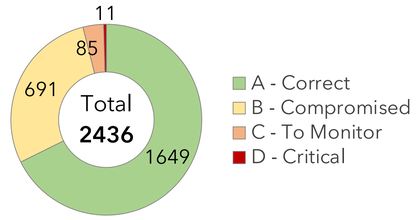

Figure 2. *Distribution of health classifications.*
The 61 patients completed 2436 AE questionnaires over the course of the study, resulting in 691 yellow alerts and 96 orange or red alerts. More than 60% of the alerts was managed through outpatient care or with a rapid intervention to resolve the adverse events.

Figure 3. *Patient monitoring timelines during the first month of treatment.*
Each line represent the monitoring for one patient, for the "good health" and "poor health" groups. Days when patients completed their health questionnaire are marked with a bullet point and the health status by colored areas. The gray areas indicate timespans without a classification.

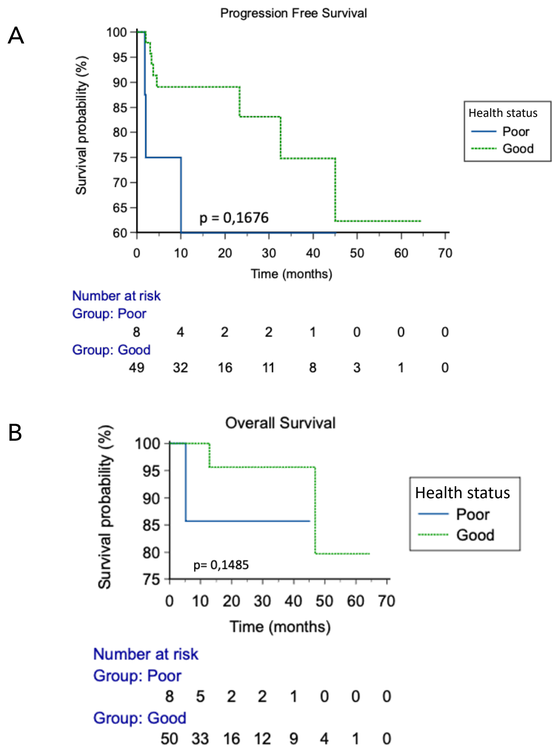

Figure 4. *Comparison of the PFS (A) and OS (B) for the two health status groups.*

Conclusions & Perspectives

- Our study is the first to assess the impact of tolerance treatment on survival, using the first-month health status from the telemonitoring platform described here.
- The initial results suggest that e-PRO assessment by the platform could help identify in the early stages the patients that require further health assessment and potential therapeutic changes.
- While further follow-up of more patients will be required, our study highlights the importance of e-PRO in cancer patient care.