

Patient Preferences for End-Stage Renal Disease Management

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BACKGROUND

- Dialysis is a primary treatment modality for end-stage renal disease (ESRD) patients.
- Benefits of dialysis for elderly (age 75+) ESRD patients in prolonging survival or better quality of life (QoL) are not clear.
- Dialysis also imposes large fiscal burden on the patients and their families in many countries worldwide, including Singapore. Despite subsidies and some insurance coverage, most patients end up using personal funds to pay for treatments.
- Overall high dialysis uptake is observed for elderly ESRD patients in Singapore.

OBJECTIVES AND HYPOTHESES

Objectives:

- To assess patients' awareness about treatment alternatives.
- To investigate patient-level factors influencing the decision to choose dialysis or CM.

Hypotheses:

- Patients lack information about CM as an alternative treatment to dialysis, and about the expected survival, quality of life (QoL) and cost associated with dialysis and CM.
- Expected survival, QoL, out-of-pocket (OOP) cost and treatment type will influence patient choices.

METHODS

- Setting:** Department of Renal Medicine, Singapore General Hospital.
- Sample:** 248 elderly pre-dialysis patients (age 65+) with stage 3B to 5 chronic kidney disease (CKD) based on measured eGFR using CKD-EPI equation.
- Respondents answered a series of questions on their:
 - Awareness of CM as a treatment option.
 - Knowledge on expected survival, QoL and OOP cost under dialysis and CM.
- Design:** Survey, including a Discrete Choice Experiment
- In the DCE, respondents were asked to assume that they have ESRD and choose one of the two treatment alternatives that vary by four attributes (Table 1).

Table 1. Attributes and Levels

| Attribute | Dialysis | Conservative Management |
|---------------------------------------|---|---------------------------------|
| Type of treatment | In-centre blood dialysis 3 times a week Water-bag dialysis at home (daily) | Conservative management |
| Expected survival | 1 year / 3 years / 6 years / 10 years | 1 year / 3 years |
| Quality of daily life | Poor / Fair / Good / Very Good | |
| Expected out-of-pocket cost per month | \$700 / \$1500 / \$3000 / \$7000 | \$250 / \$500 / \$1000 / \$2000 |

- Each respondent answered 7 choice tasks (Figure 1).
- Choice tasks were created based on an experimental design generated in SAS that ensures efficient parameter estimates for each attribute level.

Figure 1. Example DCE Task

| If these were the only treatment options, which one would you choose? | | |
|---|---|--------------------------|
| | Treatment A | Treatment B |
| Type of Treatment | In-centre blood dialysis (3 times a week) | Conservative management |
| Expected survival | 3 years | 1 year |
| Quality of daily life | Fair | Fair |
| Expected out-of-pocket cost per month | \$3000 | \$250 |
| If these were the only options, which would you choose? | <input type="checkbox"/> | <input type="checkbox"/> |

ANALYSIS

- Descriptive statistics were calculated on whether respondents were aware of
 - CM as a treatment option
 - Expected survival, quality of life (QoL) and out-of-pocket costs associated with dialysis and CM
- Respondents were categorized into two groups:
 - Pro-CM:** chose CM and/or treatment with lower cost in all treatment-choice tasks
 - Traders:** chose sometimes dialysis and sometimes CM
- A logistic regression was used to identify who was more likely to be in the Pro-CM group.
- Responses of traders were analysed using a mixed logit model to determine relative attribute importance.

RESULTS

- The mean age was 74 years and 65% of the respondents were male.
- The mean eGFR of the respondents was 23.7ml/min/1.73m².

Table 2. Patients' awareness of CM as a treatment option for ESRD

| Awareness of CM as a treatment option | % of patients |
|---------------------------------------|---------------|
| Yes | 59 |
| No | 35 |
| Not sure | 6 |

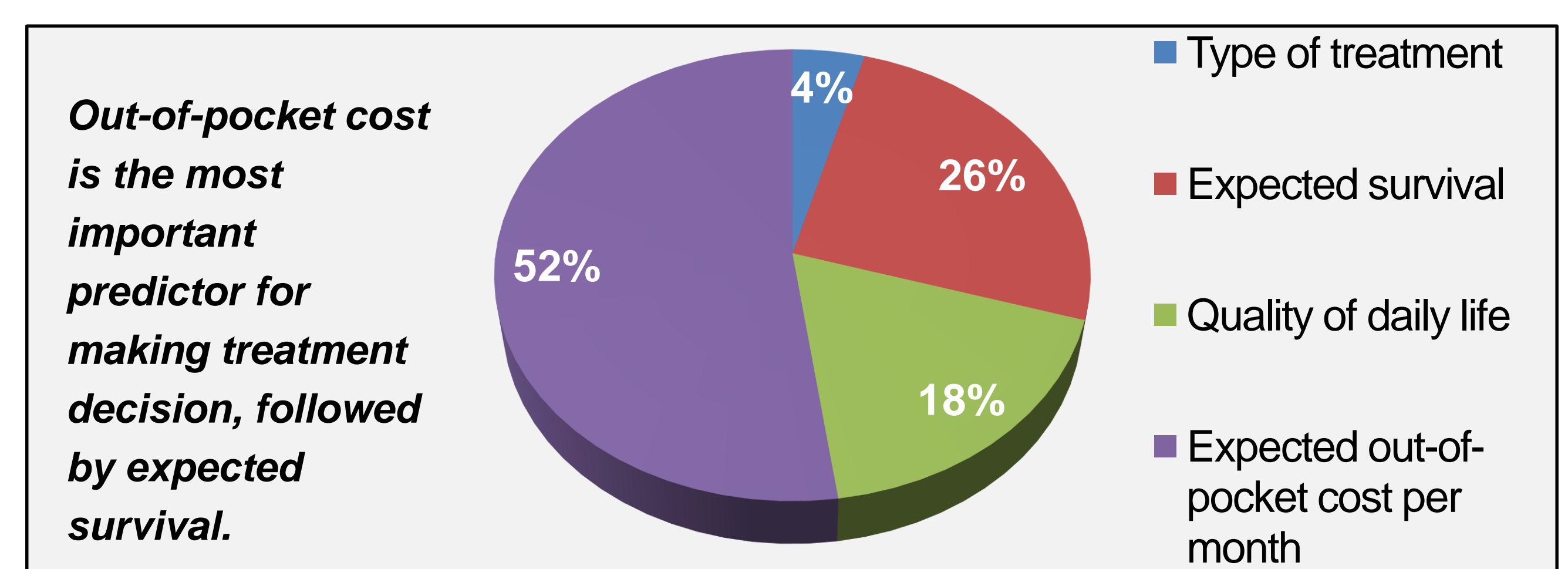
- Nearly 41% of the respondents were not aware of CM as a treatment alternative for ESRD.

Table 3. Patients knowledge on health and financial outcomes under dialysis and CM

| | Patients (in %) beliefs on treatment that offers.. | | |
|-----------------------|--|------------|----------------------------|
| | Longer Expected Survival | Better QoL | Highest out-of-pocket cost |
| Dialysis | 35 | 10 | 66 |
| CM | 20 | 61 | 2 |
| Same | 6 | 16 | 1 |
| Not sure/ Do not know | 39 | 13 | 31 |

- Nearly 40% of the respondents were unsure which treatment would offer longer expected survival.
- About 40% of the respondents did not know that CM would offer better QoL.
- 31% of the respondents were unsure which treatment would be the costliest.
- Pro-CM Group:** 61% of the respondents always chose CM and/or treatment with lower cost in all choice tasks.
- Traders:** 39% of the respondents sometimes chose dialysis and sometimes chose CM.
- Pro CM patients were:
 - Not highly educated
 - Believed they cannot change their fate, so they thought there was no point to have dialysis.

Figure 2. Relative attribute importance for treatment decision making among Traders



LIMITATIONS

- Results were based on a convenience sample of patients recruited in a hospital.
- The findings were based on stated preferences but actual decisions may depend on factors other than those that were investigated in this study.

CONCLUSION

- Elderly CKD patients were unsure about the key health outcomes under Dialysis and CM.
- Majority of the respondents preferred CM over dialysis despite the knowledge gap.
- Out-of-pocket cost was the most important factor influencing patients' treatment choices.
- The findings are likely to be predictive for individuals who face similar trade-offs.