Treatment preferences for SSAs in NETs among patients, clinicians and nurses in Australia

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BACKGROUND & OBJECTIVE:

- Long-acting somatostatin analogues (LA SSAs) are commonly used as first-line treatment in low-grade pancreatic or midgut neuroendocrine tumours (NETs).
- Due to the long-term nature of SSA treatment, preferences for treatment should be taken into consideration.

➔ **Objective:** To investigate treatment preferences, and relative feature importance, for LA SSA treatment for NETs, among patients, physicians and nurses in Australia

METHODS:

Sample:

- Australian patients with NETs, as well as healthcare professionals (HCPs) comprising physicians and nurses treating patients with NETs, were recruited through NeuroEndocrine Cancer Australia, specialist healthcare market research panels and online research of clinic websites.
- Eligible participants needed to provide consent to complete an online survey including a discrete experiment choice (DCE) task.
- A total of 54 patients, 27 physicians and 9 nurses completed the DCE (of 33, 26 and 20 planned respectively).
- Respondent demographics are shown in Table 1 and Table 2.
- The study received ethics approval from Bellberry Ltd.

Table 1: Patient respondent characteristics

Characteristics	Patients n= 54
Gender - male / female, n (%)	19 (35.2%) / 35 (64.8%)
Age - years, n (%)	≤50: 8 (14.8%) / ≥51: 46 (85.2%)
Geography - metro / non-metro, n (%)	33 (61.1%) / 21 (38.9%)
Currently on LA SSA treatment - yes / no, n (%)	40 (74.1%) / 14 (25.9%)

Table 2: Physician and nurse respondent characteristics

Characteristics	Physicians n= 27*	Nurses n= 9*
Specialty – Oncology / Endocrinology, n (%)	25 (92.6%) / 2 (7.4%)	8 (88.9%) / 1 (11.1%)
Years of experience, n (%)	≤6: 9 (33.3%) / ≥7: 18 (66.7%)	≤6: 4 (44.4%) / ≥7: 5 (55.6%)
Geography - metro vs. non-metro, n (%)	20 (74.1%) / 7 (25.9%)	6 (66.7%) / 3 (33.3%)

* Please note: Small base size

DCE design & model:

- DCEs are a methodological approach used to understand and model choice behaviour, where trade-offs and preferences are revealed by the choices that people make.
- All respondents were shown 12 choice scenarios (see Fig. 1) and asked to choose between 3 hypothetical treatments: *'deep subcutaneous injectable treatment'*, *'deep intramuscular injectable treatment'* or *'oral treatment'*; an opt-out was also given. Each option was described by seven attributes and corresponding levels which varied across scenarios (see Table 3).
- Attributes and levels were informed by qualitative interviews, existing research, literature and expert opinion.
- A Mixed Multinomial Logit model (MMNL) was used for analysis which allowed for preference heterogeneity (i.e., variation) between respondents. Data for patients, physicians and nurses was pooled for overall model estimation and analysed for differences between patients vs. HCPs and respondents from metropolitan vs. non-metropolitan areas.

Figure 1: Example DCE scenario

Table 3: DCE attributes, description and levels

CONCLUSION:

While patients and HCPs were aligned on the overall order of attribute importance, the study also identified varying perspectives on the ideal LA SSA treatment which should be taken into consideration when treating NETs:

➔ Patients and HCPs were in agreement on the order of attribute importance for LA SSA treatments for NETs:
1. PFS
2. Symptom control for diarrhea & flushing
3. Risk of GI side effects
4. Frequency of administration

➔ Physicians and nurses valued the attributes *'PFS'* and *'symptom control for diarrhea and flushing'* more than patients, revealing a higher preference for these clinical outcomes from a healthcare practitioner perspective when considering LA SSA treatments.

➔ Respondents from non-metropolitan areas indicated a higher degree of importance for the attributes *'symptom control for diarrhea and flushing'* and *'risk of GI side effects'* than respondents from metropolitan areas, drawing attention to the accessibility of medical services in non-metropolitan areas.

RESULTS:

- The statistical model showed an overall preference for oral administration over deep subcutaneous and intramuscular injection, holding everything else constant, i.e., independent of other treatment features (higher β estimates indicating higher preference, p-values of <0.05 indicating statistical significance of results) (see Table 4).

Table 4: MMNL model results for alternative specific constants

Alternative specific constants	Estimate (β)	p-value
Oral administration	-1.402	0.002
Deep subcutane injection	-2.595	<0.001
Deep intramuscular injection	-2.772	<0.001

(Reference category: Opt-out)

- Relative attribute importance is shown in Fig. 2 to Fig. 5, split by respondent groups and treatment mode:
  - Attributes with the biggest utility difference between the lowest and highest levels were the most important, i.e., *'PFS'*, followed by *'symptom control for diarrhea and flushing'*, *'risk of GI side effects'* and *'frequency of administration'* as indicated by the steepness of the lines (see Box 1 for more explanation on interpreting Fig. 2 to Fig. 5).
  - *'PFS'* and *'symptom control for diarrhea and flushing'* had a significantly higher degree of importance to physicians & nurses than to patients as indicated by the steeper lines for these attributes in Fig. 3 (compared to Fig. 2) and Fig. 5 (compared to Fig. 4).
  - *'Symptom control for diarrhea and flushing'* and *'risk of GI side effects'* had a significantly higher importance to respondents from non-metropolitan areas than metropolitan areas as indicated by the bigger incline/decline of the green vs. dark blue lines for these attributes in Fig. 2 to Fig 5.
  - The attributes *'treatment administration'*, *'treatment delivery'* and *'patient support'* (as well as *'frequency of administration'* for the oral treatment option) were found to be non-significant in relation to the other attributes and therefore excluded from the model.

Figure 2: Patient attribute importance: Deep SC & IM injectable treatment
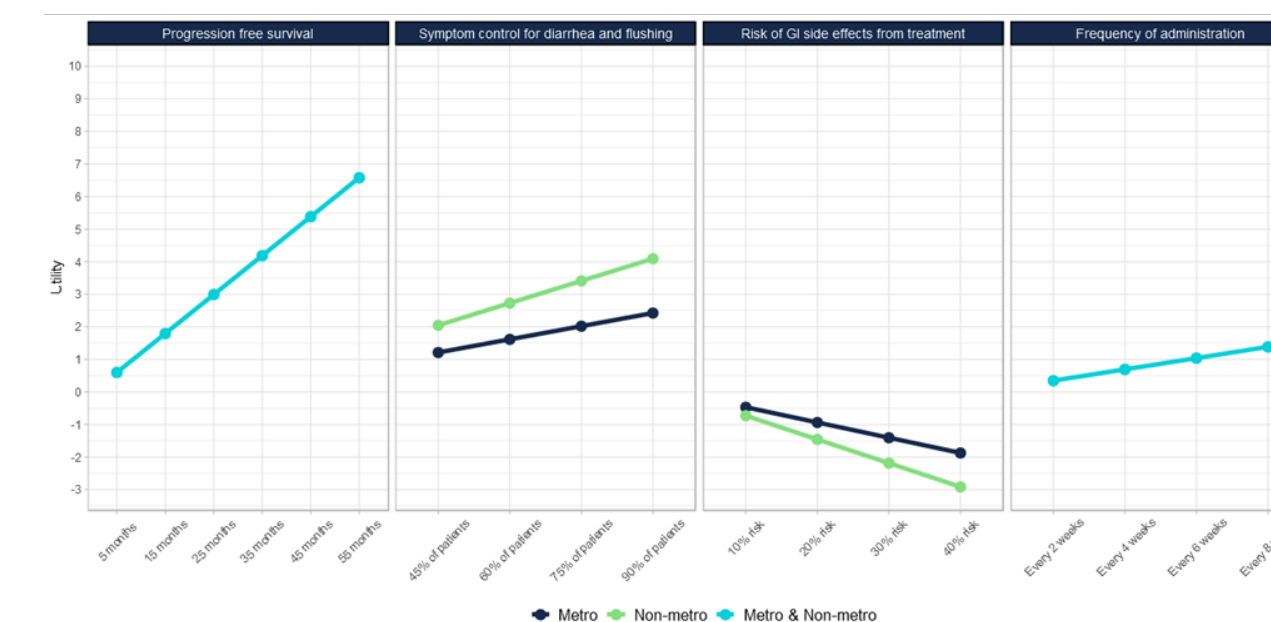

Figure 3: Physician & nurse attribute importance: Deep SC & IM injectable treatment
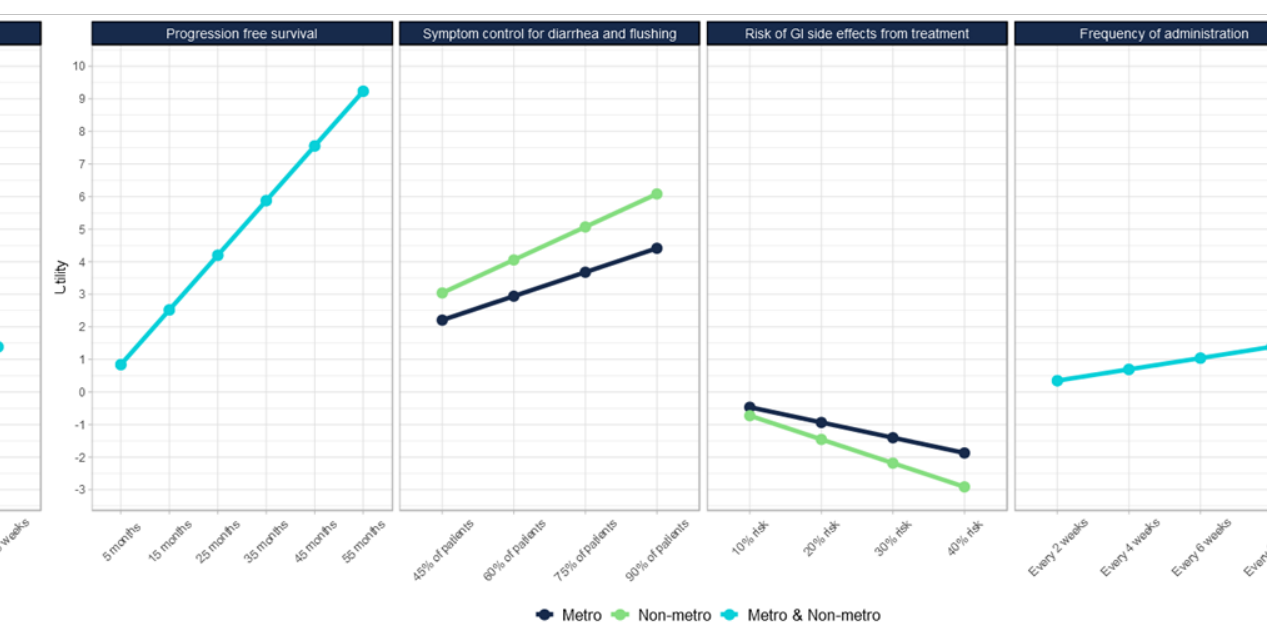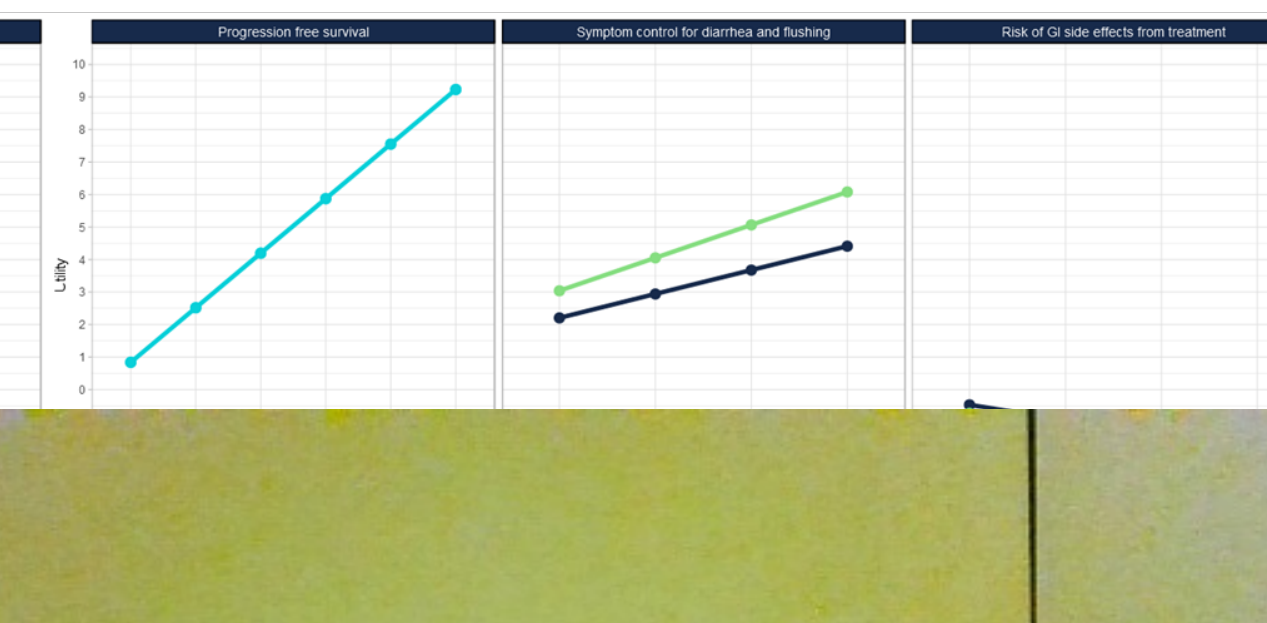

Figure 4: Patient attribute importance: Oral treatment

Figure 5: Physician & nurse attribute importance: Oral treatment

Box 1: Guide to interpreting Fig. 2 to F...
- *Gradient (incline or steepness) of th... highest levels) indicates how impor... the steepest slope and is therefore ...*
- *Positive vs negative slope: Attribute... (e.g., PFS, as the number of months... between levels, show a decrease in...*
- *Two lines vs. one line: Where two li... attribute importance between the...*