

# 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

Features	Deep subcutaneous injectable treatment	Deep intramuscular injectable treatment	Oral treatment
Frequency of administration	Requires refrigeration	Requires refrigeration	No refrigeration required and needs to be taken on an empty stomach
Frequency of administration	Every 2 weeks	Every 2 weeks	Twice daily
Treatment administration	Self-injection at home (either by patient or family member/caregiver)	Nurse/GP at patient's home	Tablet at home
Treatment delivery	Solution requires reconstitution (mixing) prior to administration	Solution requires reconstitution (mixing) prior to administration	Tablet
Response to treatment	90% likelihood of response	90% likelihood of response	90% likelihood of response
Symptom control	90% of patients have control of symptoms	90% of patients have control of symptoms	90% of patients have control of symptoms
Risk of gastro-intestinal (GI) side effects from treatment	10% risk	10% risk	10% risk
Availability of patient support	None	None	None

Table 3: DCE attributes, description and levels

Attribute	Description	Deep subcutaneous injectable treatment	Deep intramuscular injectable treatment	Oral treatment
Frequency of administration	How often the treatment needs to be injected / taken	Every 2 weeks Every 4 weeks Every 6 weeks Every 8 weeks	Every 2 weeks Every 4 weeks Every 6 weeks Every 8 weeks	Twice daily Once daily
Treatment administration	Who can administer treatment and where	Self-injection at home (either by patient or family member/caregiver) Nurse/GP at patient's home Nurse/GP at GP practice Nurse/specialist at clinic/hospital	Nurse/GP at patient's home Nurse/GP at GP practice Nurse/specialist at clinic/hospital	Patient at home
Treatment delivery	The format in which the treatment is delivered	Pre-filled syringe Solution requires reconstitution (mixing) prior to administration	Pre-filled syringe Solution requires reconstitution (mixing) prior to administration	Tablet
Progression free survival	The length of time during (and after) treatment that the disease is stable / under control, i.e. does not get worse	5 months 15 months 25 months 35 months 45 months 55 months	5 months 15 months 25 months 35 months 45 months 55 months	5 months 15 months 25 months 35 months 45 months 55 months
Symptom control for diarrhea and flushing	How well the treatment is able to control disease symptoms, i.e. flushing and diarrhoea, which may influence quality of life	90% of patients have control of symptoms 75% of patients have control of symptoms 60% of patients have control of symptoms 45% of patients have control of symptoms	90% of patients have control of symptoms 75% of patients have control of symptoms 60% of patients have control of symptoms 45% of patients have control of symptoms	90% of patients have control of symptoms 75% of patients have control of symptoms 60% of patients have control of symptoms 45% of patients have control of symptoms
Risk of gastro-intestinal (GI) side effects from treatment	GI side effects can include diarrhoea, abdominal pain, nausea, increase in blood glucose levels etc.	10% risk 20% risk 30% risk 40% risk None	10% risk 20% risk 30% risk 40% risk None	10% risk 20% risk 30% risk 40% risk None
Availability of patient support	Patient support provided by the manufacturer of the treatment (helping with e.g. information materials or injection services)	None	Financial support for diagnostic testing Exercise physiology and mental health counselling Nurse/GP training on how to self-inject at patient's home Nurse/GP injection service at patient's home	Financial support for diagnostic testing Exercise physiology and mental health counselling

## 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:

- PFS
- Symptom control for diarrhea & flushing
- Risk of GI side effects
- 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.

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## 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  $\beta$  estimates indicating higher preference, p-values of <0.05 indicating statistical significance of results) (see Table 4).
- 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.

Table 4: MMNL model results for alternative specific constants

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

(Reference category: Opt-out)

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

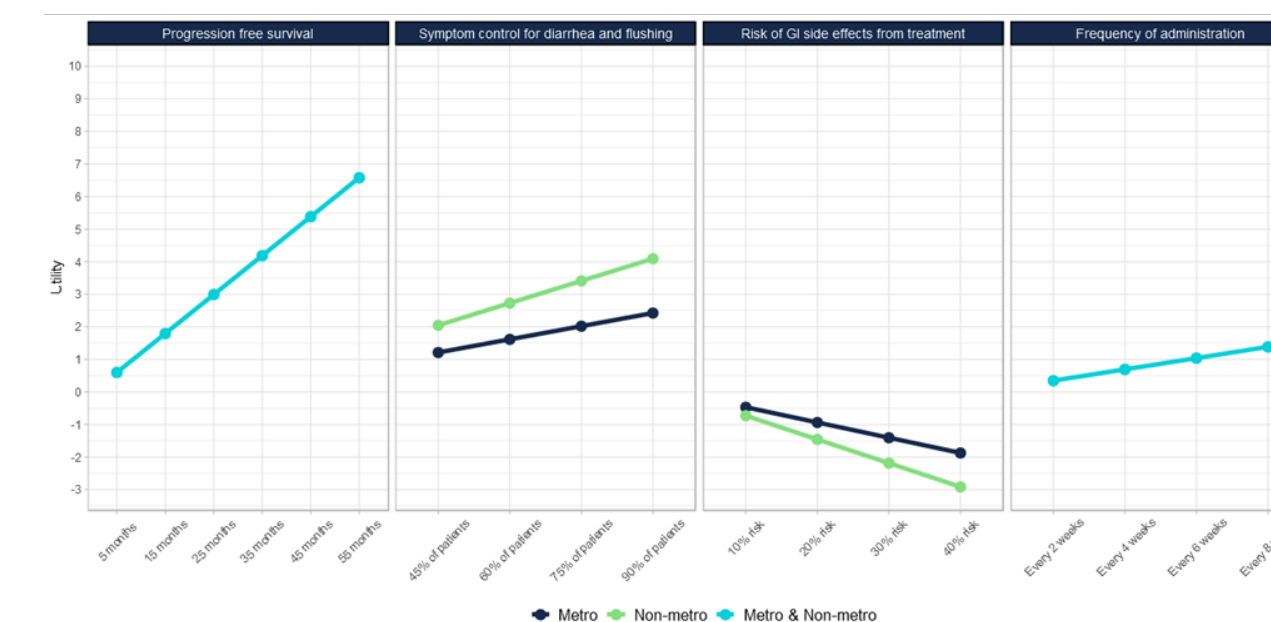


Figure 3: Physician & nurse attribute importance: Deep SC & IM injectable treatment

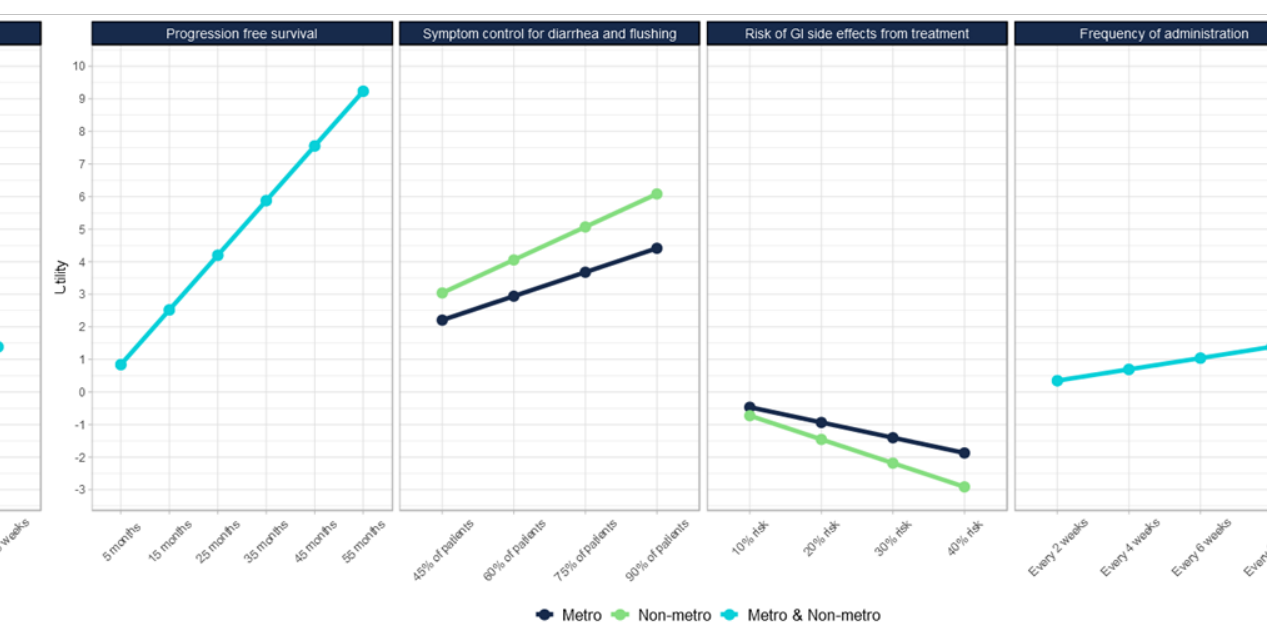
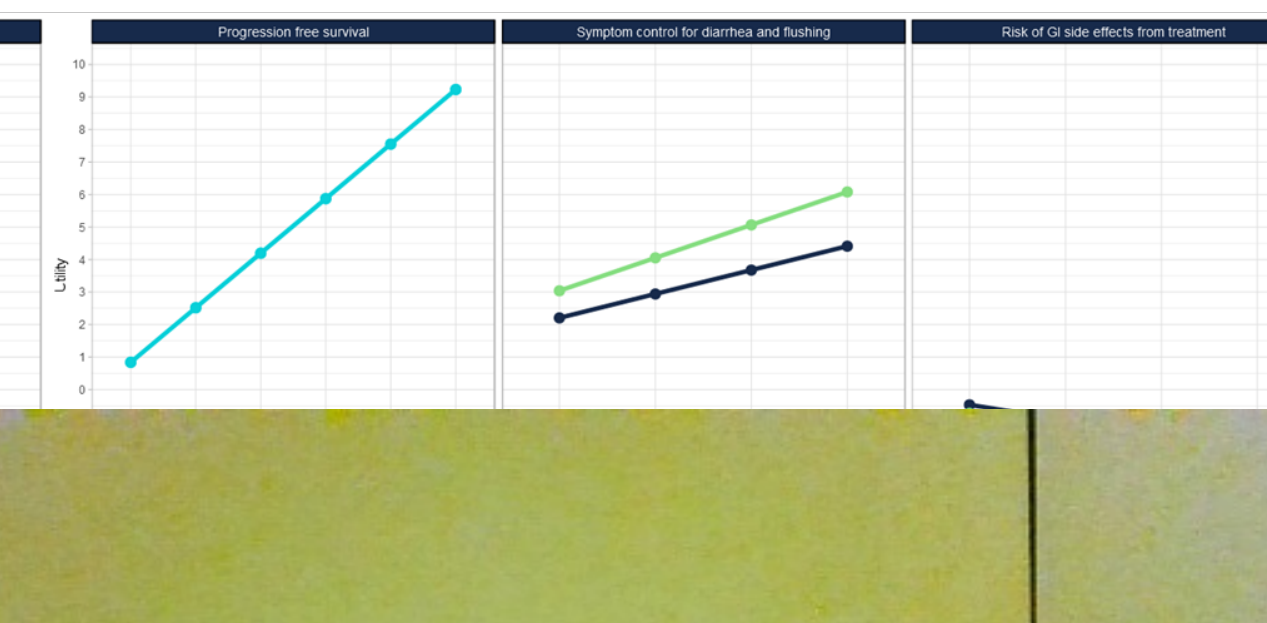


Figure 4: Patient attribute importance: Oral treatment



Figure 5: Physician & nurse attribute importance: Oral treatment



### Box 1: Guide to interpreting Fig. 2 to Fig. 5

- Gradient (incline or steepness) of the highest levels) indicates how important 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 lines indicate attribute importance between the

