5.11 PASIREOTIDE,

long-acting release intramuscular injection, 20mg, 40mg, 60mg,

Signifor® LAR, Novartis.

# Purpose of Application

* 1. The submission requested a Section 100 listing for pasireotide long-acting release (LAR) for the treatment of acromegaly in patients inadequately controlled with either octreotide LAR 30mg or lanreotide autogel (ATG) 120mg.

# Requested listing

* 1. The requested restriction is shown below. Suggestions and additions proposed by the Secretariat to the requested listing are added in italics and suggested deletions are crossed out with strikethrough.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Name, Restriction,  Manner of administration and form | | Max.  Qty | №.of  Rpts | Dispensed Price for Max. Qty | Proprietary Name and Manufacturer | |
| pasireotide  Intramuscular injection 20mg  Intramuscular injection 40mg  Intramuscular injection 60mg | | 2 | 5 | $''''''''''''''' (Public)  $''''''''''''''''''''' (Private) | Signifor LAR® | Novartis |
| **Category /**  **Program** | Section 100 – Highly Specialised Drugs Program | | | | | |
| **Prescriber type:** | Dental Medical Practitioners Nurse practitioners Optometrists  Midwives | | | | | |
| **PBS Indication:** | Acromegaly | | | | | |
| **Treatment phase:** | Initial treatment | | | | | |
| **Restriction Level / Method:** | Authority Required - In Writing | | | | | |
| **Clinical criteria:** | *The condition must be active*  *AND*  The *treatment must be after failure of therapy* ~~patient must have been treated~~ with either octreotide LAR 30 mg or lanreotide ATG 120 mg every 28 days  *AND*  *Patient must* have a mean growth hormone level greater than 2.5 micrograms per litre and IGF-1 >1.3 x ULN. | | | | | |
| **Administrative Advice** | *Special Pricing Arrangements apply* | | | | | |
| **Cautions** | Careful monitoring of patients is mandatory due to high risk of developing hyperglycaemia. | | | | | |

* 1. The ESC considered that a stopping rule should be included, similar to that of the comparators, to ensure that pasireotide does not continue to be used when ineffective.
  2. Listing was requested on a cost-minimisation basis of pasireotide 40mg or 60mg with a mixed comparator of maximum doses of octreotide LAR (30mg) or lanreotide ATG (120mg).

*For more details on PBAC’s view, see section 7 “PBAC outcome”*

# Background

* 1. TGA status at time of PBAC consideration: Pasireotide LAR was approved by the TGA on 4 May 2015 for the treatment of adult patients with acromegaly for whom surgery is not an option or has not been curative or who are inadequately controlled on treatment with other somatostatin analogues. The submission noted that approval for the associated device was expected from the TGA in the second half of 2015.
  2. Pasireotide LAR has not been previously considered by the PBAC.

# Clinical place for the proposed therapy

* 1. Acromegaly is a rare condition characterised by a consistently high level of circulating growth hormone. Acromegaly increases the risk of mortality through the long-term effects of comorbidities such as sleep apnoea, cardiovascular problems and diabetes. Surgery is the primary treatment for acromegaly, but if this is not possible then medical treatment with somatostatin analogues (SSAs) is the current standard of care. Octreotide LAR and lanreotide ATG are SSAs that are PBS-listed for the first-line treatment of acromegaly in Australia.
  2. The proposed restriction for pasireotide LAR limits use to second-line treatment of acromegaly patients with an inadequate response to treatment with the maximum recommended doses of other SSAs; either octreotide LAR 30mg or lanreotide ATG 120mg. The ESC agreed with the clinical place of the proposed therapy*.*

*For more details on PBAC’s view, see section 7 “PBAC outcome”.*

# Comparator

* 1. A mixed comparator of maximum doses of octreotide LAR (30mg) or lanreotide ATG (120mg) was proposed. The ESC considered that this was reasonable, although the cost-effectiveness of continued SSA use despite suboptimal response is unclear.

*For more details on PBAC’s view, see section 7 “PBAC outcome”.*

# PBAC consideration of the evidence

## Sponsor hearing

* 1. There was no hearing for this item.

## Consumer comments

* 1. The PBAC noted that no consumer comments were received for this item.

## Clinical trials

* 1. The submission is based on one head-to-head trial comparing pasireotide LAR 40mg and 60mg to a mixed active comparator arm of octreotide LAR 30mg or lanreotide ATG 120mg (n=198).
  2. Details of the trials presented in the submission are provided in the table below.

Table 1: Trials and associated reports presented in the submission

|  |  |  |
| --- | --- | --- |
| **Trial ID** | **Protocol title/ Publication title** | **Publication citation** |
| **Direct randomised trial** | | |
| C2402 | A phase III, multicentre, randomized, parallel-group study to assess the efficacy and safety of double-blind pasireotide LAR 40mg and pasireotide LAR 60mg versus open-label octreotide LAR or lanreotide ATG in patients with inadequately controlled acromegaly.  Gadelha MR et al. Pasireotide versus continued treatment with octreotide or lanreotide in patients with inadequately controlled acromegaly (PAOLA): a randomised, phase 3 trial. | Clinical Study Report, September 2013  *Lancet Diabetes Endocrinol* 2014; 2 (11):875-884 |

Source: Table 10, p52 of the submission

* 1. The key features of the randomised trial is summarised in the table below.

Table 2: Key features of the included evidence

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Trial** | **N** | **Design/ duration** | **Risk of bias** | **Patient population** | **Outcome(s)** |
| **Pasireotide LAR vs octreotide LAR or lanreotide ATG** | | | | | |
| C2402 | 198 | R, MC, partially blinded, three-arm, active control, PG  24 weeks | Low for primary outcome | Patients with acromegaly inadequately controlled on max doses of octreotide LAR or lanreotide ATG | Biochemical control at 24 weeks |

Note: biochemical control = mean growth hormone concentration <2.5mcg/L and normalised IGF-1 concentration

Abbreviations: MC, multi-centre; PG, parallel-group; R, randomised.

Source: compiled during the evaluation

* 1. There were two pasireotide LAR treatment arms of 40mg and 60mg dose strengths. Due to differences in administration and appearance, only the two dose strengths of pasireotide LAR were blinded during the trial, with the active control arm open-label. However, many of the outcomes assessed for efficacy were objective laboratory measures (growth hormone and IGF-1 levels).

## Comparative effectiveness

* 1. The primary efficacy outcome was the proportion of patients with complete biochemical control, as measured by growth hormone levels <2.5mcg/L and normalisation of sex- and age-adjusted IGF-1 at 24 weeks. Pasireotide LAR at both dose strengths had a statistically significantly greater proportion of patients with complete biochemical control compared to the active control arm.

Table 3: Proportion of patients achieving complete biochemical control by Week 24 (full analysis set)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Trial C2402** | **n /N (%)** | **95% CI for %** | **Odds Ratio vs. active control [95% CI]** | **P value vs. active control a** |
| Pasireotide LAR 40mg | 10/65 (15.4%) | [7.36–26.48] | 16.63 [3.32, ∞] | <0.0001 |
| Pasireotide LAR 60mg | 13/65 (20%) | [11.10–31.77] | 23.03 [4.72, ∞] | <0.0001 |
| Active control | 0/68 (0.0%) | [0.00–5.28] | NA | NA |

Note: biochemical control = mean growth hormone concentration <2.5mcg/L and normalised IGF-1 concentration

a The p value was one-sided and calculated using stratified exact logistic regression

Abbreviations: CI, confidence intervals; NA, not applicable

Source: Table 22, p73 of the submission

* 1. The majority of patients in the pasireotide LAR arms of the trial achieved some level of tumour reduction (40mg – 80.95%, 60mg – 70.27%), compared to 50% of patients in the active control arm. A significantly greater proportion of patients in both pasireotide LAR arms of the trial demonstrated a >25% reduction in tumour volume by week 24 compared to the active control arm. However, there was no significant difference between pasireotide LAR at either dose and active control therapy in the reduction of most signs and symptoms of acromegaly (fatigue, perspiration, osteoarthralgia, paraesthesia, ring size), and overall changes in symptom scores within each treatment group were small.Quality of life, as measured by the acromegaly-specific AcroQol scale, showed little change in all treatment groups over the 24 week period. The ESC considered that a lack of blinding may bias these outcomes.

*For more details on PBAC’s view, see section 7 “PBAC outcome”.*

## Comparative harms

* 1. There were fewer overall adverse events and treatment-related adverse events in the active control arm than in the pasireotide LAR arms of the trial. The key patient-relevant adverse events identified in trial C2402 that were more common in the pasireotide-treated arms than the active control arm were hyperglycaemia-related events and diarrhoea. Discontinuations due to adverse events in the pasireotide arms of the trial were due to hyperglycaemia-related events in six of the seven cases. The submission noted that fewer patients would be expected to experience adverse events in the active control arm, as they had been taking the same medication for at least six months prior to the trial. The ESC considered this to be reasonable and applicable to the proposed place in treatment for the PBS population.

Table 4: Summary of adverse events in C2402 trial at week 24

|  | Pasireotide 40mg N=63 | Pasireotide 60mg  N=62 | Active control  N=66 |
| --- | --- | --- | --- |
| **Summary of adverse events** | | | |
| Adverse event | 58 (92.1%) | 53 (85.5%) | 49 (74.2%) |
| Treatment-related adverse event | 45 (71.4%) | 46 (74.2%) | 29 (43.9%) |
| Serious adverse event | 6 (9.5%) | 2 (3.2%) | 3 (4.5%) |
| Grade 3 or higher adverse event | 11 (17.5%) | 12 (19.4%) | 5 (7.6%) |
| Adverse event leading to trial discontinuation | 3 (4.8%) | 4 (6.5%) | 0 (0.0%) |
| **Specific treatment-related adverse events** | | | |
| Hyperglycaemia  [Grade 3 or 4 hyperglycaemia] | 21 (33.3)  [7 (11.1)] | 18 (29.0)  [5 (8.1)] | 4 (6.1)  [0] |
| Diabetes mellitus  [Grade 3 or 4 diabetes mellitus] | 12 (19.0)  [0] | 16 (25.8)  [2 (3.2)] | 3 (4.5)  [0] |
| Diarrhoea | 7 (11.1) | 12 (19.4) | 1 (1.5) |
| Cholelithiasis | 6 (9.5) | 7 (11.3) | 8 (12.1) |
| Alopecia | 1 (1.6) | 4 (6.5) | 0 |
| Increased blood glucose levels | 3 (4.8) | 4 (6.5) | 0 |
| Abdominal pain | 4 (6.3) | 3 (4.8) | 0 |
| Dizziness | 4 (6.3) | 1 (1.6) | 0 |
| ***All cause adverse events*** | | | |
| *Hyperglycaemia* | *33%* | *30.6%* | *13.6%* |
| *Diabetes Mellitus* | *20.3%* | *25.8%* | *7.6%* |
| *Diarrhoea* | *15.9%* | *19.4%* | *4.5%* |

Source: Table 33, p83; Table 37, p88 of the submission

*Rows in italics added from Table 1 of the PSCR*

* 1. The Pre-Sub-Committee Response (PSCR, p1) considered that it is more reasonable to compare the total adverse events than drug related adverse events between patient groups, acknowledging that the rate of these events is higher among patients taking pasireotide. The PSCR further noted that there was a risk of bias in attributing adverse events to the study drugs. The ESC considered that the discussion of bias due to those on comparators being stabilised previously is not relevant since this is the setting in which it is proposed that pasireotide be used in practice.
  2. The ESC also considered that the exclusion criteria of the trial (particularly poorly controlled diabetes, cardiac disease and use of QT prolonging medicines) may impact the risk of adverse drug events in the PBS population.

*For more details on PBAC’s view, see section 7 “PBAC outcome”.*

## Benefits/harms

* 1. A summary of the comparative benefits and harms for pasireotide LAR 40mg and 60mg versus the active comparator arm (octreotide LAR 30mg or lanreotide ATG 120mg) over the 24 weeks of Trial C2402 is presented in the table below.

Table 5: Summary of comparative benefits and harms for pasireotide LAR and octreotide LAR/lanreotide ATG

| **Trial** | **Pasireotide LAR** | **Active control** | **OR**  **(95% CI)** | **Event rate/100 patients/24wks** | | **RD**  **(95% CI)** | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Pasireotide** | **Active control** |
| **Benefits** | | | | | | | |
| **Complete biochemical control (GH <2.5mcg/L and normalisation of sex- and age-adjusted IGF-1 at 24 weeks** | | | | | | | |
| C2402 40mg | 10/65 | 0/68 | 16.63  (3.32, ∞]) | 15.4 | 0 | NR | |
| C2402 60mg | 13/65 | 0/68 | 23.03  (4.72, ∞) | 20 | 0 | NR | |
| **Harms** | | | | | | | |
|  | **Pasireotide LAR** | **Active control** | **OR**  **(95% CI)** | **Event rate/100 patients/24wks** | | | **RD**  **(95% CI)** |
| **Pasireotide** | **Active control** | |
| **Hyperglycaemia** | | | | | | | |
| C2402 40mg | 21/63 | 4/66 | NR | 33.3 | 6.1 | | NR |
| C2402 60mg | 18/62 | 4/66 | 29.0 | 6.1 | |
| **Diabetes mellitus** | | | | | | | |
| C2402 40mg | 12/63 | 3/66 | NR | 19.0 | 4.5 | | NR |
| C2402 60mg | 16/62 | 3/66 | 25.8 | 4.5 | |
| **Diarrhoea** | | | | | | | |
| C2402 40mg | 7/63 | 1/66 | NR | 11.1 | 1.5 | | NR |
| C2402 60mg | 12/62 | 1/66 | 19.4 | 1.5 | |

Abbreviations: GH, growth hormone; IGF-1, insulin-like growth factor-1; RD, risk difference; OR, odds ratio; wks, weeks

Source: Compiled during the evaluation

* 1. On the basis of direct evidence presented by the submission, for every 100 patients treated with pasireotide LAR 40mg in comparison to octreotide LAR 30mg or lanreotide ATG 120mg, over a maximum duration of 24 weeks;
* Approximately 15 additional patients would have complete biochemical control
* Approximately 27 additional patients would experience a hyperglycaemia event assessed as attributable to the drug.
* Approximately 14 additional patients would develop diabetes assessed as attributable to the drug.
* Approximately 9 additional patients would experience diarrhoea assessed as attributable to the drug.
  1. The ESC noted that using the revised numbers for total adverse events rather than drug related adverse events as per the Table 1 of the PSCR (p1) makes minimaldifference to overall benefits and harms, reducing the difference in hyperglycaemia to 20, diabetes to 13 and increasing the difference in diarrhoea to 11.
  2. For every 100 patients treated with pasireotide LAR 60mg in comparison to octreotide LAR 30mg or lanreotide ATG 120mg over a maximum duration of exposure of 24 weeks;
* Approximately 20 additional patients would have complete biochemical control
* Approximately 23 additional patients would experience a hyperglycaemia event assessed as attributable to the drug.
* Approximately 21 additional patients would develop diabetes assessed as attributable to the drug.
* Approximately 18 additional patients would experience diarrhoea assessed as attributable to the drug.
  1. The ESC noted that using the revised numbers for total adverse events rather than drug related adverse events reduces these numbers slightly to 17 for hyperglycaemia, 18 for diabetes and 15 for diarrhoea.

## Clinical claim

* 1. The submission described pasireotide LAR as superior in terms of comparative effectiveness and inferior in terms of comparative safety over the continued use of octreotide LAR or lanreotide ATG for the treatment of patients with inadequately controlled acromegaly. This claim may be adequately supported in terms of biochemical efficacy, and is adequately supported in terms of safety.
  2. The PBAC considered that the claim of superior comparative effectiveness was reasonable.
  3. The PBAC considered that the claim of inferior comparative safety was reasonable.

For more details on PBAC’s view, see section 7 “PBAC outcome”.

## Economic analysis

* 1. The submission presented a cost-minimisation analysis, despite the claim of superiority in efficacy and inferior safety and a proposed place in therapy after failure of treatment with the comparators, due to difficulties in quantifying the benefits of pasireotide in terms of quality-adjusted life years (QALYs). The ESC noted that there was no observed statistically significant effect on quality of life in the short-term trial, and the long-term impact of better biochemical control and more adverse events including diabetes on QALYs has not been assessed. This would require modelling of these outcomes.
  2. The equi-effective doses were assumed to be the doses used in Trial C2402: pasireotide LAR 40mg or 60mg every 28 days of ongoing therapy; and either octreotide LAR 30mg or lanreotide ATG 120mg every 28 days of ongoing therapy. There has been no formal assessment of equi-effective doses, although the submission argued that the evidence of superior efficacy of pasireotide LAR at both 40mg and 60mg dose strengths over the nominated comparator doses made such a comparison reasonable. The ESC considered that the superior biochemical efficacy and greater toxicity of pasireotide than the comparators suggest that this is not anappropriate basis to determine an equi-effective dose and that a cost-minimisation analysis may not be appropriate here.
  3. The submission calculated a weighted average price for the comparators, octreotide LAR 30mg and lanreotide ATG 120mg, based on proportional use in the 2014 calendar year. The submission proposed a cost-minimised price for pasireotide LAR that incorporated a cost-offset for the cost of managing hyperglycaemic events and diabetes. Weighted costs of diabetes medicines were calculated from Medicare data, and the costs were applied to the proportion of patients from Trial C2402 who initiated those diabetes medicines during the trial. This was considered a substantial underestimate of the costs associated with management of diabetes. The estimate did not take into account the costs of treating exacerbations of symptoms in patients already taking diabetes medicines, progression of disease, or the costs of treating complications of diabetes. The proposed reduction in cost represents a less than 0.5% discount on the effective DPMQ for pasireotide LAR.The ESC noted the above and agreed with the evaluation.
  4. The PSCR (p3) claimed that the cost of treating hyperglycaemia-related adverse events over time will decrease. The ESC considered the response did not adequately address the treatment costs of micro and macrovascular complications of diabetes mellitus.

*For more details on PBAC’s view, see section 7 “PBAC outcome”*

## *Effective pasireotide LAR cost/patient/year: $''''''''''''''''''''' (public hospital);*

***$''''''''''''''''''' (private hospital)***

* 1. The cost of pasireotide LAR treatment per patient per year was calculated by multiplying the effective DPMQ ($''''''''''''''''''''' for public hospitals and $'''''''''''''''''''' for private hospitals) by 6.5 scripts per year (each script is for two injections, administered every 28 days). Treatment is ongoing. The cost per patient per year for octreotide LAR at the maximum dose of 30mg is $'''''''''''''''''''''' (public) and $'''''''''''''''''''''''''' (private), and the equivalent cost for lanreotide ATG at the maximum dose of 120mg is $'''''''''''''''''''''''' (public) and $''''''''''''''''''''''' (private).

## Estimated PBS usage & financial implications

* 1. This submission was not considered by DUSC. The submission took an epidemiological approach to estimating utilisation and financial implications of listing pasireotide LAR, using published sources of acromegaly prevalence/incidence and use of somatostatin analogues for treatment. The submission assumed that only 50% of the eligible patient population would initiate treatment with pasireotide LAR. This was considered a likely underestimate given that patients eligible for treatment under the requested restriction are inadequately controlled on currently available therapies. The ESC noted the above and agreed with the evaluation*.*

Table 6: Estimated use and financial implications

|  | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** |
| --- | --- | --- | --- | --- | --- |
| **Estimated extent of use** | | | | | |
| Number treated | '''''' | ''''' | '''''' | ''''' | ''''''' |
| Scripts a | ''''''''' | '''''''''' | '''''''''' | ''''''''' | ''''''''' |
| **Estimated net cost to PBS/RPBS/MBS** | | | | | |
| Net cost to PBS/RPBS | $0 | $0 | $0 | $0 | $0 |
| Net cost to MBS | $''''''''''''''''''''' | $''''''''''''''''' | $''''''''''''''' | $'''''''''''''''' | $''''''''''''''' |
| **Estimated total net cost** | | | | | |
| **Net cost to PBS/RPBS/MBS** | **$''''''''''''''''''''** | **$''''''''''''''** | **$''''''''''''''** | **$''''''''''''** | **$''''''''''''** |

a Assuming 6.5 scripts per patient per year as estimated by the submission, and incorporating treatment discontinuations.

Source: Table 59, p127 of the submission.

*The redacted table above shows that the number of patients treated with pasireotide is estimated to be less than $10,000 per year at a net cost to the PBS of less than $10 million per year.*

* 1. The submission inappropriately applied discontinuation and compliance rates to the number of scripts rather than to the number of patients treated with pasireotide LAR. This means that the count of pasireotide LAR-treated patients continues to include discontinued patients and therefore indicates a possible overestimation of use. If the discontinuation rates are applied to patient numbers, the number of patients and scripts will decrease over time, with '''''' to '''''' patients per year discontinuing treatment, and only 4 incident patients added per year. The PSCR (p4) disagreed that patient numbers will decrease over time as acromegaly is a chronic condition.

## Quality Use of Medicines

* 1. The submission argued that the proposed restriction for pasireotide LAR supports quality use of medicines because it requires that patients reach the maximum dose of first-line therapies, ensuring that they derive the maximum clinical benefit from existing therapies before accessing second-line treatment. However, it may be appropriate to recommend pasireotide LAR as a second-line treatment in order to delay exposure to a higher rate of hyperglycaemia-related adverse events. The ESC considered the lack of stopping rule for pasireotide LAR increased the risk of higher than estimated utilisation of pasireotide where it is not effective. The ESC supported including a stopping rule, comparable to that for lanreotide and octreotide.

## Financial Management – Risk Sharing Arrangements

* 1. The sponsor requested a special pricing arrangement where the published price for pasireotide LAR is higher than the effective price charged to Government. To implement this price difference, the sponsor acknowledged that a Deed of Agreement would be required. The submission argued that because acromegaly is a rare condition with few treatment alternatives in the proposed PBS population, that pasireotide LAR should qualify for a special pricing arrangement.

Table 7: Proposed special pricing arrangement for pasireotide LAR, DPMQ

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Public DPMQ (2 injections)** | | **Private DPMQ (2 injections)** | |
| **Published price** | **Effective price** | **Published price** | **Effective price** |
| Pasireotide LAR | $'''''''''''''''''' | $'''''''''''''''''''''' | $''''''''''''''''''' | $''''''''''''''''''''' |

Note: The sponsor proposed a flat pricing structure across all dose strengths for pasireotide LAR

Abbreviations: DPMQ, dispensed price for maximum quantity; LAR, long-acting release

Source: Table 61, p130 of the submission

*For more detail on PBAC’s view, see section 7 “PBAC outcome”*

# PBAC Outcome

* 1. The PBAC recommended the listing of pasireotide as second-line therapy for the treatment of patients with acromegaly, on the basis that it should be available only under special arrangements under Section 100 (Highly Specialised Drugs Program). In making this recommendation, the PBAC recommended that the price be reduced to offset the cost associated with treating hyperglycaemia and diabetes attributable to treatment with pasireotide.
  2. The PBAC considered that a written authority listing would be appropriate to limit use of pasireotide to a second-line agent for the treatment of acromegaly in patients who have an inadequate response to treatment with the maximum recommended doses of other SSAs due to increased comparative harm associated with pasireotide treatment. The PBAC agreed with the Secretariat suggested wording of the restriction. The PBAC noted and agreed with the pre-PBAC response that a stopping rule was not necessary, as clinicians are likely to cease ineffective treatment due to the substantial risk of associated harms.
  3. The PBAC agreed with the ESC that the mixed comparator of maximum doses of octreotide and lanreotide was reasonable, despite the uncertain cost-effectiveness of the continued use of these comparators despite suboptimal biochemical control.
  4. The PBAC noted the submission presented one head-to-head trial comparing pasireotide with octreotide and lanreotide, noting that a significantly greater proportion of patients in the pasireotide arm achieved biochemical control compared to the active treatment arm.
  5. The PBAC noted that there was little change in quality of life across all treatment groups but considered that this was reasonable given the short (24 week) duration of the trial.

* 1. The PBAC noted the different adverse event profile between pasireotide and the comparators, agreeing with the ESC that as patients in the active control arm had been taking, and likely tolerating, the comparator medication for at least six months prior to the trial, it is reasonable that the adverse event rate would be higher in the pasireotide arm.
  2. The PBAC noted the high rates of hyperglycaemia and diabetes attributable to treatment with pasireotide compared to the comparators, reaffirming the clinical place of pasireotide as a second-line therapy after failure of other SSAs.
  3. The PBAC considered the clinical claim of superior efficacy and inferior safety over the continued use of existing SSAs for the treatment of acromegaly was adequately supported.
  4. The PBAC considered that the cost-minimisation analysis was appropriate, noting the difficulties in quantifying the benefits of pasireotide over the comparators in order to conduct a cost utility analysis. There was no formal assessment of equi-effective doses of ongoing therapy, however these are assumed to be aligned with the trial data, with pasireotide 40mg or 60mg every 28 days being equivalent to either octreotide 30mg or lanreotide 120mg every 28 days.
  5. The PBAC agreed with the ESC that the costs associated with hyperglycaemia and diabetes management were significantly underestimated by using drug costs alone and excluding the costs of treating exacerbations of symptoms, progression of disease, and micro and macrovascular complications of diabetes. The PBAC therefore considered it appropriate that the Department negotiate a revised price that appropriately includes these offsets.

* 1. The PBAC also noted that the financial estimates presented in the submission may be underestimated, but considered that the listing of pasireotide is likely to be cost neutral as it will replace the use of other SSAs at an equivalent price.
  2. The PBAC advised that under subsection 101(3BA) of the *National Health Act* 1953, that pasireotide should not be treated as interchangeable on an individual patient basis with any other drug.
  3. The PBAC advised that pasireotide is not suitable for prescribing by nurse practitioners in line with other somatostatin analogues for the treatment of acromegaly.
  4. The PBAC recommended that the Safety Net 20 Day rule should not apply.
  5. The submission is not eligible for an Independent Review, because the PBAC has made a positive recommendation.

## Outcome:

Recommended

# Recommended listing

* 1. Add new item:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name, Restriction,  Manner of administration and form | | Max.  Qty | №.of  Rpts | Proprietary Name and Manufacturer | |
| pasireotide  20mg injection: modified release  40mg injection: modified release  60mg injection: modified release | | 2 | 5 | Signifor LAR® | Novartis |
| **Category /**  **Program** | Section 100 – Highly Specialised Drugs Program | | | | |
| **Prescriber type:** | Dental Medical Practitioners Nurse practitioners Optometrists  Midwives | | | | |
| **PBS Indication:** | Acromegaly | | | | |
| **Treatment phase:** | Initial treatment | | | | |
| **Restriction Level / Method:** | Authority Required - In Writing | | | | |
| **Clinical criteria:** | The condition must be active  AND  The treatment must be after failure of therapy with either octreotide LAR 30 mg or lanreotide ATG 120 mg every 28 days  *AND*  Patient must have a mean growth hormone level greater than 2.5 micrograms per litre and IGF-1 >1.3 x ULN. | | | | |
| **Administrative Advice** | Special Pricing Arrangements apply | | | | |
| **Cautions** | Careful monitoring of patients is mandatory due to high risk of developing hyperglycaemia. | | | | |

|  |  |
| --- | --- |
| **Category /**  **Program** | Section 100 – Highly Specialised Drugs Program |
| **Prescriber type:** | Dental Medical Practitioners Nurse practitioners Optometrists  Midwives |
| **Episodicity:** | - |
| **Severity:** | - |
| **Condition:** | Acromegaly |
| **PBS Indication:** | Acromegaly |
| **Treatment phase:** | Continuing treatment |
| **Restriction Level / Method:** | Restricted benefit  Authority Required - In Writing  Authority Required - Telephone  Authority Required – Emergency  Authority Required - Electronic  Streamlined |
| **Treatment criteria:** | - |
| **Clinical criteria:** | The condition must be active,  AND  The patient must be currently treated with 40 mg or 60 mg pasireotide LAR,  AND  The treatment must cease in a patient treated with radiotherapy if there is biochemical evidence of remission (normal IGF-1) after pasireotide has been withdrawn for at least 4 weeks (8 weeks after the last dose). |
| **Population criteria:** | Patient must be 18 years or older |
| **Foreword** | - |
| **Definitions** | - |
| **Prescriber Instructions** | In a patient treated with radiotherapy, pasireotide should be withdrawn every 2 years in the 10 years after radiotherapy for assessment of remission. |
| **Administrative Advice** | - |
| **Cautions** | Careful monitoring of patients is mandatory due to high risk of developing hyperglycaemia. |

# Context for Decision

The PBAC helps decide whether and, if so, how medicines should be subsidised in Australia. It considers submissions in this context. A PBAC decision not to recommend listing or not to recommend changing a listing does not represent a final PBAC view about the merits of the medicine. A company can resubmit to the PBAC or seek independent review of the PBAC decision.

# Sponsor’s Comment

The sponsor had no comment.