

## Diabetes Subcommittee of PTAC meeting held 20 April 2012

### (minutes for web publishing)

Diabetes Subcommittee minutes are published in accordance with the *Terms of Reference for the Pharmacology and Therapeutics Advisory Committee (PTAC) and PTAC Subcommittees 2008*.

Note:

- that this document is not necessarily a complete record of the Diabetes Subcommittee meeting; only the relevant portions of the minutes relating to Diabetes Subcommittee discussions about an Application or PHARMAC staff proposal that contain a recommendation are generally published.
- that any part of the minutes relating to hospital pharmaceuticals and the establishment of a national Preferred Medicines List (PML) will be released, in a complete publication with the original Hospital Pharmaceuticals Subcommittee minutes and final recommendations made by PTAC, once PTAC have reviewed each therapeutic group.

The Diabetes Subcommittee may:

- (a) recommend that a pharmaceutical be listed by PHARMAC on the Pharmaceutical Schedule and the priority it gives to such a listing;
- (b) defer a final recommendation, and give reasons for the deferral (such as the supply of further information) and what is required before further review; or
- (c) recommend that PHARMAC decline to list a pharmaceutical on the Pharmaceutical Schedule.

These Subcommittee minutes were reviewed by PTAC at its meeting on 2 & 3 August 2012, the record of which will be made available in September 2012.

---

### Contents

1	Therapeutic Group Review .....	2
2	Incretin therapies review.....	5
3	Linagliptin (Trajenta) for type 2 diabetes.....	8
4	Liraglutide (Victoza) for type 2 diabetes.....	9

# 1 Therapeutic Group Review

- 1.1 The Subcommittee considered the review of the Diabetes therapeutic group provided by PHARMAC staff.

## *Insulin pumps*

- 1.2 The Subcommittee considered a PHARMAC summary on the current status of the proposal to fund insulin pumps. The Subcommittee noted that at the time of the meeting, PHARMAC staff were continuing to work through all the feedback to the consultation, however a summary of some of the clinical issues raised during the consultation was provide for review.
- 1.3 The Subcommittee considered the proposed Special Authority criteria for insulin pumps. The Subcommittee **recommended** that HbA1c measures of 10 mmol/mol should be used in the criteria rather than 11 mmol/mol for simplicity.
- 1.4 The Subcommittee **recommended** that patients with pancreatic agenesis or who have had a pancreatectomy should be eligible for insulin pump therapy given that these patients have very similar disease progression when compared with patients with type 1 diabetes.
- 1.5 The Subcommittee **recommended** that patients with neonatal diabetes be eligible for insulin pump therapy. Members noted that there are very few patients with neonatal diabetes however considered insulin pump therapy to be a more appropriate and effective method of deliver small amounts of insulin to these patients.
- 1.6 Members considered that some patients with cystic fibrosis who are severely insulin deficient would benefit from insulin pump therapy. The Subcommittee **recommended** that PHARMAC staff undertake analysis to establish the cost-effectiveness of insulin pump for this patient population.
- 1.7 The Subcommittee considered that a pump trial would not be necessary for most patients as long as the clinician applying for funding was satisfied that the patient was suitable and had done an appropriate psychological assessment. The Subcommittee considered there could be approximately 5% - 10% of patients who did not continue pump therapy, and noted that this can be due to not tolerating the pump being continuously attached. The Subcommittee considered that some groups of patients, often teenagers, can have a higher rate of unsuccessful pump initiations.
- 1.8 The Subcommittee noted that once funded, a patient would have 9 months to demonstrate a positive clinical effect from using the pump. The Subcommittee noted that should at any point during therapy the use of a pump become a danger to the individual, the pump should be removed by the clinician. The Subcommittee considered that patients safely using their pump but who do not meet the renewal criteria for funded consumables, should retain their pump and continue to privately purchase consumables if they wished.

- 1.9 The Subcommittee considered that the requirement to have tried a multiple daily injection (MDI) regimen could be increased to 6 months for many patients, as this would be more consistent, particularly if the period over which hypoglycaemic events are measured is also 6 months. The Subcommittee noted that 6 months may not be an appropriate period of time for some paediatric patients and therefore the criteria should state that the MDI trial should be for 6 months except for paediatric patients in whom a trial on MDI was not appropriate due to very young age.
- 1.10 The Subcommittee considered whether further definitions should be incorporated into the criteria. The Subcommittee considered that a multidisciplinary team should consist of at least two members with experience in insulin pump therapy which includes a physician and a diabetes nurse specialist. The Subcommittee noted that patients must adequately supported, not only during the initiation but ongoing. The Subcommittee considered that patients should have been provided adequate training in carbohydrate counting from a registered dietician.
- 1.11 The Subcommittee considered the warranty of pumps and using other consumables. The Subcommittee considered that PHARMAC seek further advice in relation to this issue, and that this should be clearly communicated following any decision to fund insulin pumps.

#### *Meters and test strips*

- 1.12 The Subcommittee considered a summary on the current status of PHARMAC's proposal to fund the CareSens brand of blood glucose test strips and meters. The Subcommittee noted that at the time of the meeting, PHARMAC staff were continuing to work through all the feedback to the consultation, however PHARMAC's notes from the five Public Consultation Meetings were reviewed.
- 1.13 The Subcommittee noted that the funding for blood ketone testing strips would not be affected by the proposal and blood ketone meters and strips would continue to be listed. The Subcommittee noted that approximately 2000 patients currently use blood ketone strips, however it appeared from the data that only about 1,700 patients use the Optium Xceed meter for its dual functionality to test both ketones and glucose. The Subcommittee considered that whilst it would be acceptable for patients to have two meters, it would be preferable if patients already using the Optium meter for its dual purpose could continue to do so. Members noted that if the proposal for sole supply of test strips was progressed then new patients would have a second meter for blood ketones.
- 1.14 The Subcommittee considered that patients who were using the Accu-Chek Combo insulin pump would have significantly reduced functionality of the pump if the Accu-chek Performa test strips were not funded. The Subcommittee **recommended** that funding be provided for Accu-Chek Performa test strips for this group of patients. Members noted that if the proposal for sole supply of test strips was progressed, then new patients should not anticipate funding of this test strip.
- 1.15 The Subcommittee considered that the software which operates with the CareSens devices lacks some of the useful functions offered by other existing software programs. Members noted that the 'modal day' function, which overlays the daily blood glucose

readings is very useful to view patterns and should be incorporated into the CareSens software if possible.

- 1.16 The Subcommittee considered that connectivity of the software is important and creates efficiencies. The Subcommittee considered that this allows data to be viewed across the network meaning that data this can be seen by clinicians working remotely or from various sites. The Subcommittee considered that this should be addressed should a decision be made to fund CareSens meters according to the current proposal.
- 1.17 The Subcommittee considered the data supplied by PHARMAC staff regarding the ability for no-coding meters to detect expired strips. The Subcommittee noted that two other currently funded no-coding meters also do not produce an error message if an expired strip is used. The Subcommittee noted that meters which need to be coded can give inaccurate readings if the coding process is done incorrectly. On balance, the Subcommittee considered that both technologies have risks of operator error and that should CareSens meters be funded, patients should be provided with clear reminders to check the expiry date on the pack of strips before using. The Subcommittee noted information relating to the detection of error which could be expected with spoiled strips in light of the adverse events which occurred when expired Accu-Chek Advantage strips gave falsely high readings.
- 1.18 The Subcommittee noted the issues raised in the consultation responses around lancets. The Subcommittee noted that funding is not directly provided for lancets and that these are currently supplied via a meter pack or with test strips. The Subcommittee considered that should distribution costs be reduced, this might offer an acceptable solution to the funding of lancets.
- 1.19 The Subcommittee considered the acceptability of the haematocrit range of the CareSens meters. The Subcommittee noted that several other currently funded meters have a more restrictive haematocrit range. Members noted that it would be unusual for patients using these meters to be switched if haematocrit levels were outside of the range. The Subcommittee considered the haematocrit range for the CareSens meters to be acceptable.
- 1.20 The Subcommittee noted its interest in reviewing collated information from the consultation process, so as to better understand consumer and health professional concerns.

### *Pioglitazone*

- 1.21 The Subcommittee considered whether the Special Authority restriction applying to pioglitazone could be removed. The Subcommittee considered that pioglitazone has some safety issues, including increased fracture risk and possible increased risk of bladder cancer. On balance, members **recommended** that the Special Authority could be removed from pioglitazone. The Subcommittee considered there would be no fiscal risk in removing the restriction.

### *Short Acting Insulin*

- 1.22 The Subcommittee noted the decreasing usage of short acting insulins, however Members considered that these have a niche use, particularly in hospital, and have different pharmacokinetics from analogue insulin.

### *Detemir*

- 1.23 The Subcommittee considered the potential place in therapy for insulin detemir, should it and insulin pumps be funded. The Subcommittee noted that insulin detemir has a shorter half life compared with insulin glargine and may be useful for patients who have a variable exercise routine. The Subcommittee considered that for a small number of patients insulin detemir may provide adequate control, and provide a potential alternative to pump therapy.

## **2 Incretin therapies review**

### **Application**

- 2.1 The Subcommittee reviewed a PHARMAC generated proposal to fund incretin therapies including dipeptidyl peptidase-4 inhibitors (DPP-4s: linagliptin, saxagliptin, sitagliptin and vildagliptin) or glucagon-like peptide-1 agonists (GLP-1s: exenatide twice daily and liraglutide once daily).

### **Recommendation**

- 2.2 The Subcommittee **recommended** that DPP-4s be funded with a medium priority for patients not achieving target HbA1c results despite optimal treatment with metformin and sulphonylureas or for patients with severe renal dysfunction who could not tolerate metformin.
- 2.3 The Subcommittee **recommended** that DPP-4s be funded with a high priority for patients not achieving target HbA1c despite treatment with maximum tolerated doses of metformin and in patients unable to use sulphonylureas or insulin due to occupational risk.
- 2.4 The Subcommittee **recommended** the following Special Authority Criteria:

**Initial application** from any medical practitioner. Approvals valid for six months for applications meeting the following criteria:

Either:

1. Patient is not achieving adequate glycaemic control despite treatment with maximum tolerated doses of metformin and sulphonylurea for at least 6 months; or
2. Patient is not achieving target HbA1c despite treatment with maximum tolerated doses of sulphonylurea and has severe renal dysfunction (<30 ml/min); or
3. Patient is not achieving target HbA1c on maximum tolerated doses of metformin for the previous 6 months and is unable to use insulin or sulphonylurea therapy due to occupational risk.

Renewal from any medical practitioner. Approvals valid for six months for applications meeting the following criteria:

Patient has achieved an HbA1c reduction of 5 mmol/mol from baseline.

- 2.5 The Subcommittee **recommended** that GLP-1s be funded as combination therapy for patients with a BMI > 35 kg/m<sup>2</sup> with a medium priority.
- 2.6 The Subcommittee **recommended** that GLP-1s be funded as combination therapy for patients with a BMI > 35 kg/m<sup>2</sup>, for whom insulin or sulphonylurea's must be avoided due to occupational risk with a high priority.
- 2.7 The Subcommittee recommended the following Special Authority criteria:

**Initial application** from any medical practitioner. Approvals valid for six months for applications meeting the following criteria:

Both

1. patient has a BMI of >35 kg/m<sup>2</sup>; and
2. treatment with insulin or sulphonylureas is contraindicated due to occupational risk of hypoglycaemia

Renewal from any medical practitioner. Approvals valid for six months for applications meeting the following criteria:

1. Patient has achieved an HbA1c reduction of 10 mmol/mol from baseline and continues to benefit from treatment

The Decision Criteria particularly relevant to this recommendation are: *(i) the health needs of all eligible people within New Zealand; (ii) the particular health needs of Maori and Pacific peoples; (iii) the availability and suitability of existing medicines, therapeutic medical devices and related products and related things; (iv) the clinical benefits and risks of pharmaceuticals.*

## Discussion

- 2.8 The Subcommittee considered the general effect of incretin therapies on glucose homeostasis. The Subcommittee noted that glucagon-like peptide-1 (GLP-1) has both a local effect on the gut to produce satiety and a central effect on appetite, decreases glucagon secretion when glucose increases, and stimulates insulin secretion from the beta cell when blood glucose increases. The Subcommittee considered that the effect of GLP-1 on improving beta cell function is uncertain and its positive effects on neurological and cardiovascular function were still being investigated.
- 2.9 The Subcommittee noted that the effect of incretin therapies is produced by prolonging or mimicking the effect of GLP-1. The Subcommittee noted that DPP-4s work by inhibiting the enzyme (DPP-4) which degrades GLP-1 or by mimicking the effect of GLP-1 (GLP-1s). The Subcommittee noted the primary aim of treatment is to reduce HbA1c and therefore micro- and macro-vascular outcomes of diabetes, however members noted that incretin therapies have a positive effect on weight (i.e. weight neutral in the case of DPP-4's and weight reducing with GLP-1 analogues) and a lower risk of hypoglycaemia.
- 2.10 The Subcommittee considered that DPP-4s produce an average HbA1c reduction of 5 to 10 mmol/mol and the extent of reduction appears to be greater if HbA1c is higher at initiation. The Subcommittee considered that the DPP-4 class exhibit similar efficacy to sulphonylureas and pioglitazone, but are less effective than metformin. The Subcommittee noted the main side effects associated with DPP-4s are an increased risk of infections involving the respiratory and urinary tracts, while the increased risk of pancreatitis remains uncertain.

- 2.11 The Subcommittee considered that the efficacy and safety of the reviewed DPP-4's (sitagliptin, saxagliptin, linagliptin and vildagliptin) is similar with the main differences being in the pharmacokinetic profiles. The Subcommittee noted that renally excreted DPP-4s may require dose reductions in patients with moderate to severe renal impairment and that linagliptin, which is excreted faecally may be advantageous in this patient group. The Subcommittee noted that saxagliptin may have a higher rate of interactions with other pharmaceuticals given its effect on the cytochrome P450 enzyme system.
- 2.12 The Subcommittee noted that the GLP-1 class of medicines have a more potent effect on incretin hormones and therefore produce a greater effect on HbA1c and reduction and on weight compared with DPP-4s. The Subcommittee considered that GLP-1s reduce HbA1c by 0.8 – 1.8% on average, and patients lose between 3 – 4 kg from baseline however most patients were greater than 95 kg and the clinical significance of this weight reduction is uncertain.
- 2.13 The Subcommittee considered that the main disadvantages of GLP-1 therapy are that the treatments are injectable. Members noted that GLP-1s are associated with side effects such as nausea. The Subcommittee noted that fewer patients produce antibodies to liraglutide once daily treatment compared with exenatide twice daily preparations.
- 2.14 The Subcommittee considered that the incretin therapies appear to retain efficacy over a greater period of time with a decay in effect on HbA1c of approximately 0.15 mmol/mol per annum compared with 0.3 mmol/mol for sulphonylureas. The Subcommittee considered that this sustained effect on HbA1c reduction could delay the need for insulin therapy by 3 to 5 years.
- 2.15 The Subcommittee considered that these treatments could be used earlier in the treatment algorithm, particularly in patients for whom metformin is contraindicated.
- 2.16 The Subcommittee noted the NICE care pathway (<http://www.nice.org.uk/nicemedia/pdf/CG87QuickRefGuide.pdf>) which recommends that a DPP-4 or thiazolidinedione (TZD) should be considered as dual therapy with metformin, for patients with a raised HbA1c in whom sulphonylureas are not tolerated or a causing significant hypoglycaemia. The Subcommittee noted that the addition of a DPP-4s or TZD is recommended instead of insulin if insulin is unacceptable due to employment, social, recreational or other personal issues or obesity. The guideline recommends that treatment with DPP-4 or TZD be continued if patients achieve a reduction of at least 0.5% in 6 months.
- 2.17 The Subcommittee considered that elements of the NICE care pathway would be appropriate for targeting therapy should DPP-4s be funded. The Subcommittee considered that treatment be targeted to patients not achieving adequate glycaemic control after a trial on metformin and sulphonylureas, or in whom metformin cannot be used due to severe renal impairment (GFR <30 ml/min) or for patients who can not use treatments which can induce hypoglycaemia due to their vocation. The Subcommittee considered that an HbA1c reduction of 0.5% after 6 months treatment would be an appropriate outcome target.
- 2.18 The Subcommittee noted the NICE care pathway which recommends that exenatide be added to metformin and sulphonylurea therapy in patients with a BMI >35 kg/m<sup>2</sup> or in

patients with a BMI <35 kg/m<sup>2</sup> if insulin is unacceptable because of occupational implications or if weight loss would benefit other comorbidities. The guidelines note that patients must achieve at least a 1% reduction in HbA1c and achieve a 3% reduction in weight after 6 months in order to continue treatment.

- 2.19 The Subcommittee considered that elements of the NICE care pathway would be appropriate for targeting therapy should a GLP-1 be funded. The Subcommittee considered that GLP-1s treatment be targeted to patients with a BMI > 35 kg/m<sup>2</sup> and potentially for patients following an event such as post myocardial infarction or post stroke.
- 2.20 The Subcommittee considered the comparators to GLP-1 treatments. The Subcommittee noted that initiating patients on insulin requires a significant amount of resource and support, and that these costs in addition to the cost of blood glucose testing and the risk of hypoglycaemia should be included in the cost utility analysis. The Subcommittee considered that bariatric surgery could also be a suitable comparator for some patients.

### 3 Linagliptin (Trajenta) for type 2 diabetes

#### Application

- 3.1 The Subcommittee reviewed a joint funding application from Boehringer Ingelheim and Eli Lilly for linagliptin (Trajenta) for the treatment of type 2 diabetes. It was noted that linagliptin was undergoing registration and the recommendations contained in this minute were subject to regulatory approval.

#### Recommendation

- 3.2 The Subcommittee **recommended** that linagliptin be funded with a medium priority for patients not achieving target HbA1c results despite optimal treatment with metformin and sulphonylureas or for patients with severe renal dysfunction who could not tolerate metformin.
- 3.3 The Subcommittee **recommended** that linagliptin be funded with a high priority for patients not achieving target HbA1c despite treatment with maximum tolerated doses of metformin and in patients unable to use sulphonylureas or insulin due to occupational risk.
- 3.4 The Subcommittee **recommended** the following Special Authority Criteria:

**Initial application** from any medical practitioner. Approvals valid for six months for applications meeting the following criteria:

Either:

4. Patient is not achieving adequate glycaemic control despite treatment with maximum tolerated doses of metformin and sulphonylurea for at least 6 months; or
5. Patient is not achieving target HbA1c despite treatment with maximum tolerated doses of sulphonylurea and has severe renal dysfunction (<30 ml/min); or
6. Patient is not achieving target HbA1c on maximum tolerated doses of metformin for the previous 6 months and is unable to use insulin or sulphonylurea therapy due to occupational risk.

Renewal from any medical practitioner. Approvals valid for six months for applications meeting the following criteria:

1. Patient has achieved an HbA1c reduction of 5 mmol/mol from baseline.

The Decision Criteria particularly relevant to this recommendation are: *(i) the health needs of all eligible people within New Zealand; (ii) the particular health needs of Maori and Pacific peoples; (iii) the availability and suitability of existing medicines, therapeutic medical devices and related products and related things; (iv) the clinical benefits and risks of pharmaceuticals.*

## Discussion

- 3.5 The Subcommittee noted that linagliptin is a once daily DPP-4 inhibitor indicated as monotherapy or in combination with either metformin or a sulphonylurea or both. The Subcommittee considered the main point of difference for linagliptin compared with other DPP-4s is that due to its route of excretion, no dose adjustment is necessary for patients with renal or hepatic impairment.
- 3.6 The Subcommittee considered a series of indirect comparisons provided by the supplier which analysed the effect of linagliptin in comparison to sitagliptin. The Subcommittee also considered two randomised controlled trials which assessed the safety and efficacy of linagliptin in monotherapy (Del Prato S et al. Diabetes Obes Metab. 2011 Mar; 13(3):258-67) and in combination with metformin (Taskinen et al. Diabetes Obes Metab. 2011 Jan; 13(1):65-74). The Subcommittee considered that overall, the safety and efficacy of linagliptin is comparable to other previously reviewed DPP-4 therapies.
- 3.7 The Subcommittee considered that elements of the NICE care pathway would be appropriate for targeting therapy should linagliptin be funded. The Subcommittee considered that treatment be targeted to patients not achieving adequate glycaemic control after a trial on metformin and sulphonylureas, or in whom metformin cannot be used due to severe renal impairment (GFR <30 ml/min) or for patients who can not use treatments which can cause hypoglycaemia due to their vocation. The Subcommittee considered that an HbA1c reduction of 0.5% after 6 months treatment would be an appropriate outcome target.

## 4 Liraglutide (Victoza) for type 2 diabetes

### Application

- 4.1 The Subcommittee reviewed a funding application from NovoNordisk Australia for liraglutide (Victoza) for the treatment of type 2 diabetes as a third line agent following dual therapy failure (metformin/sulphonylurea/thiazolidinedione) and before the use of insulin.

### Recommendation

- 4.2 The Subcommittee **recommended** that liraglutide 1.2 mg be funded as combination therapy for patients with a BMI > 35 kg/m<sup>2</sup> with a medium priority.

4.3 The Subcommittee **recommended** that liraglutide 1.2 mg be funded as combination therapy for patients with a BMI > 35 kg/m<sup>2</sup>, for whom insulin or sulphonylurea's must be avoided due to occupational risk with a high priority.

4.4 The Subcommittee **recommended** the following Special Authority criteria:

**Initial application** from any medical practitioner. Approvals valid for six months for applications meeting the following criteria:

Both

3. patient has a BMI of >35 kg/m<sup>2</sup>; and
4. treatment with insulin or sulphonylureas is contraindicated due to occupational risk of hypoglycaemia

Renewal from any medical practitioner. Approvals valid for six months for applications meeting the following criteria:

2. Patient has achieved an HbA1c reduction of 10 mmol/mol from baseline and continues to benefit from treatment

The Decision Criteria particularly relevant to this recommendation are: *(i) the health needs of all eligible people within New Zealand; (ii) the particular health needs of Maori and Pacific peoples; (iii) the availability and suitability of existing medicines, therapeutic medical devices and related products and related things; (iv) the clinical benefits and risks of pharmaceuticals.*

## Discussion

4.5 The Subcommittee noted that liraglutide is a GLP-1 mimetic which is slowly absorbed following subcutaneous administration and has a unique mode of action in comparison to other funded treatments for the treatment of hyperglycaemia associated with type 2 diabetes.

4.6 The Subcommittee considered that liraglutide can be used in combination with metformin, sulphonylureas (SUs), and thiazolidinediones (TZDs) SU however noted that a 50% dose reduction of SU is advised. The Subcommittee considered that there are no currently funded treatments with a similar effect.

4.7 The Subcommittee noted that the main side effects of liraglutide include anorexia, flatulence, nausea and diarrhoea and an increased risk of infections. The Subcommittee noted that patient can develop antibodies however these do not appear to affect the efficacy of the pharmaceutical. The Subcommittee noted that due to liraglutide's effect to delay gastric emptying, the absorption of other medicines could be affected.

4.8 The Subcommittee considered the evidence provided in the application to be of moderate strength and good quality. The Subcommittee considered the studies included in the LEAD clinical development programme which recruited more than 4000 patients. The LEAD programme included seven studies comparing the effect of varying doses of liraglutide in monotherapy or in combination and rosiglitazone 4 mg (LEAD-1), glimepiride 4 mg (LEAD-2), glimepiride 8 mg (LEAD-3), placebo (LEAD-4), insulin glargine 24 iu/day (LEAD-5), exenatide 10 mcg twice daily (LEAD-6) and sitagliptin 100 mg once daily (Study NN2211-1860). In a review of the programme, Davies et al. (Diabetes, Obesity and Metabolism 2011; 13:207-220) reported that liraglutide decreased HbA1c by up to

1.5% which was greater than for all comparators, except in LEAD-2 when it showed equivalence with glimepride 4 mg.

- 4.9 The Subcommittee noted the 26 week, randomised parallel group, open label study (LEAD6) Buse et al. (Lancet 2009; 9683:39-47) comparing the effect of liraglutide 1.8 mg once daily (n=233) vs exenatide 10 mcg twice daily (n=231) on HbA1c reduction after 26 weeks. Participants had a baseline HbA1c of between 7% and 11% and were either taking metformin or a sulphonylurea or both for at least 3 months prior to the study and this was continued during the study unless hypoglycaemia occurred. The authors reported a HbA1c reduction of -1.12% vs -0.79% in the liraglutide and exenatide groups respectively, with a significant difference of -0.33 (95% CI: -0.47 to -0.18;  $p < 0.0001$ ). The Subcommittee considered that liraglutide appears to be more effective at lowering pre-prandial blood glucose and exenatide more effective at lowering post-prandial blood glucose. The Subcommittee noted that the liraglutide group appeared to have more serious and severe adverse drug reactions compared with exenatide.
- 4.10 The Subcommittee noted the high cost of liraglutide, and that targeting treatment to patients with BMI  $>35$  kg/m<sup>2</sup> markedly increased the cost effectiveness. The Subcommittee considered that the benefits of treatment include a lower risk of hypoglycaemia compared with insulin or sulphonylureas and that this would be particularly useful for patients who must avoid hypoglycaemia for occupational reasons, or who have hypoglycaemic unawareness. The Subcommittee considered that liraglutide can be used in patients with poor renal function, may produce weight loss of approximately 3% body weight after 6 months treatment and potentially greater weight loss with greater duration of treatment. The Subcommittee considered that treatment could be further targeted to patients with early macrovascular complications of diabetes.
- 4.11 The Subcommittee considered that it is likely that liraglutide would be used in combination with one or more of the following oral agents: metformin, sulphonylureas and TZDs. The Subcommittee noted that it is likely that there would be a smaller effect of liraglutide on HbA1c if a number of agents were already being used. The Subcommittee noted that if target HbA1c were to be achieved that patient's with a baseline HbA1c of  $>9\%$  should be excluded.
- 4.12 The Subcommittee considered that target HbA1c reductions should be incorporated into the renewal Special Authority criteria which should be assessed following 6 months of treatment. The Subcommittee considered that the average duration of treatment of liraglutide would be approximately 2 to 3 years for patients continuing to achieve these targets.
- 4.13 The Subcommittee considered there to be little difference in the clinical effect achieved by using 1.2 mg vs 1.8 mg liraglutide and therefore Members considered that only the 1.2 mg strength should be funded.