Pretibial myxoedema. Pretibial myxoedema (deposition of glycosaminoglycans in the subcutaneous tissue of the shins) is associated with Graves' disease (see Hyperthyroidism, p.2165). There are reports of apparent benefit from the use of octreotide for this condition. In one case,[1,2] octreotide given for 6 months after surgical removal of the myxoedematous tissue may have prevented its recurrence. In another,[3] octreotide injected intralesionally was reported to improve and control the condition. However, in other cases[4] subcutaneous octreotide has been ineffective.

1. Derrick EK, *et al.* Successful surgical treatment of severe pretibial myxoedema. *Br J Dermatol* 1995; **133:** 317–18.
2. Felton J, *et al.* Successful combined surgical and octreotide treatment of severe pretibial myxoedema reviewed after 9 years. *Br J Dermatol* 2003; **148:** 825–6.
3. Shinohara M, *et al.* Refractory pretibial myxoedema with response to intralesional insulin-like growth factor 1 antagonist (octreotide): downregulation of hyaluronic acid production by the lesional fibroblasts. *Br J Dermatol* 2000; **143:** 1083–6.
4. Rotman-Pikielny P, *et al.* Lack of effect of long-term octreotide therapy in severe thyroid-associated dermopathy. *Thyroid* 2003; **13:** 465–70.

Raised intracranial pressure. For a reference to octreotide being tried in idiopathic intracranial hypertension, see p.1181.

Sulfonylurea overdose. Octreotide has been used in the treatment of severe refractory cases of sulfonylurea-induced hypoglycaemia (see p.461).

Preparations

Proprietary Preparations (details are given in Part 3)

Arg.: Sandostatin; ***Austral.:*** Sandostatin; ***Austria:*** Sandostatin; ***Belg.:*** Sandostatine; ***Braz.:*** Sandostatin; ***Canad.:*** Sandostatin; ***Chile:*** Sandostatin; ***Cz.:*** Sandostatin; ***Denm.:*** Sandostatin; ***Fin.:*** Sandostatin; ***Fr.:*** Sandostatine; ***Ger.:*** Sandostatin; ***Gr.:*** Sandostatin; ***Hong Kong:*** Sandostatin; ***Hung.:*** Sandostatin; ***India:*** Sandostatin; ***Indon.:*** Sandostatin; ***Irl.:*** Sandostatin; ***Israel:*** Sandostatin; ***Ital.:*** Longastatina; Samilstin; Sandostatina; ***Malaysia:*** Sandostatin; ***Mex.:*** Proclose; Sandostatina; ***Neth.:*** Sandostatine; ***Norw.:*** Sandostatin; ***NZ:*** Sandostatin; ***Philipp.:*** Sandostatin; ***Port.:*** Sandostatina; ***Rus.:*** Sandostatin (Сандостатин); ***S.Afr.:*** Sandostatin; ***Singapore:*** Sandostatin; ***Spain:*** Sandostatin; ***Swed.:*** Sandostatin; ***Switz.:*** Sandostatine; ***Thai.:*** Sandostatin; ***Turk.:*** Sandostatin; ***UK:*** Sandostatin; ***USA:*** Sandostatin; ***Venez.:*** Sandostatin.

Multi-ingredient: ***Pol.:*** Sandostatin.

Pegvisomant *(USAN, rINN)*

B2036-PEG; Pegvisomantti; Pegvisomantum. 18-L-Aspartic acid-21-L-asparagine-120-L-lysine-167-L-asparagine-168-L-alanine-171-L-serine-172-L-arginine-174-L-serine-179-L-threonine growth hormone (human), reaction product with polyethylene glycol.

Пегвизомант

CAS — 218620-50-9.

ATC — H01AX01.

ATC Vet — QH01AX01.

Adverse Effects and Precautions

Adverse effects commonly reported with the use of pegvisomant include gastrointestinal disturbances, elevated liver function tests, flu-like symptoms, fatigue, injection site reactions, arthralgia, myalgia, peripheral oedema, headache, dizziness, somnolence, tremor, sweating, pruritus, rash, sleep disorders, hypercholesterolaemia, weight gain, hyperglycaemia, hunger, and hypertension.

Liver function tests should be measured before starting pegvisomant, then every 4 to 6 weeks for the first 6 months of therapy. In the USA, it is also recommended that further testing take place twice in the next 6 months and then twice in the following year.

Pegvisomant is structurally similar to growth hormone and may cause assays to overestimate growth hormone concentrations.

Effects on the skin. Lipohypertrophy has been described in patients who have consistently injected pegvisomant into the same subcutaneous area.[1,2] The efficacy of pegvisomant was also reduced in one case, but lipohypertrophy resolved and pegvisomant efficacy improved when the patient used the recommended technique of injection site rotation.[2]

1. Maffei P, *et al.* Lipohypertrophy in acromegaly induced by the new growth hormone receptor antagonist pegvisomant. *Ann Intern Med* 2006; **145:** 310–12.
2. Marazuela M, *et al.* Pegvisomant-induced lipohypertrophy: report of a case with histopathology. *Ann Intern Med* 2007; **147:** 741–3.

Interactions

Pegvisomant may increase insulin sensitivity. In patients with diabetes, doses of insulin or oral hypoglycaemics may need to be decreased because of the increased risk of hypoglycaemia. Patients taking opioid analgesics may require higher serum concentrations of pegvisomant to achieve appropriate IGF-I suppression.

Pharmacokinetics

Pegvisomant is absorbed slowly after subcutaneous injection, and peak serum concentrations occur after about 33 to 77 hours. It is slowly eliminated from serum, with a half-life estimated to range from 74 to 172 hours. Renal clearance of pegvisomant is negligible.

Uses and Administration

Pegvisomant is a protein of recombinant DNA origin to which several polyethylene glycol polymers are covalently bound. It is an analogue of human growth hormone that acts as an antagonist at growth hormone receptors, and is used in the treatment of acromegaly (below). A loading dose of 40 or 80 mg is given subcutaneously, followed by 10 mg daily. Further dose adjustments, in increments of 5 mg, are made according to serum concentrations of IGF-I, which should be measured every 4 to 6 weeks. The maintenance dose should not exceed 30 mg daily.

Acromegaly. Pegvisomant may be used in patients with acromegaly (p.1798) who have not responded adequately to surgery, radiotherapy, or somatostatin analogues, or when these therapies are unsuitable or not tolerated. The combination of pegvisomant with a somatostatin analogue is also under investigation in patients whose response to a somatostatin analogue alone is inadequate.

References.

1. Trainer PJ, *et al.* Treatment of acromegaly with the growth hormone-receptor antagonist pegvisomant. *N Engl J Med* 2000; **342:** 1171–7.
2. Herman-Bonert VS, *et al.* Growth hormone receptor antagonist therapy in acromegalic patients resistant to somatostatin analogs. *J Clin Endocrinol Metab* 2000; **85:** 2958–61.
3. van der Lely AJ, *et al.* Long-term treatment of acromegaly with pegvisomant, a growth hormone receptor antagonist. *Lancet* 2001; **358:** 1754–9.
4. Clemmons DR, *et al.* Optimizing control of acromegaly: integrating a growth hormone receptor antagonist into the treatment algorithm. *J Clin Endocrinol Metab* 2003; **88:** 4759–67.
5. Muller AF, *et al.* Growth hormone receptor antagonists. *J Clin Endocrinol Metab* 2004; **89:** 1503–11.
6. Feenstra J, *et al.* Combined therapy with somatostatin analogues and weekly pegvisomant in active acromegaly. *Lancet* 2005; **365:** 1644–6. Correction. *ibid.*; 1620.
7. Jehle S, *et al.* Alternate-day administration of pegvisomant maintains normal serum insulin-like growth factor-I levels in patients with acromegaly. *J Clin Endocrinol Metab* 2005; **90:** 1588–93.
8. Colao A, *et al.* Efficacy of 12-month treatment with the GH receptor antagonist pegvisomant in patients with acromegaly resistant to long-term, high-dose somatostatin analog treatment: effect on IGF-I levels, tumor mass, hypertension and glucose tolerance. *Eur J Endocrinol* 2006; **154:** 467–77.
9. Pivonello R, *et al.* Treatment with growth hormone receptor antagonist in acromegaly: effect on cardiac structure and performance. *J Clin Endocrinol Metab* 2007; **92:** 476–82. Correction. *ibid.*; 1605.
10. Neggers SJCMM, *et al.* Long-term efficacy and safety of combined treatment of somatostatin analogs and pegvisomant in acromegaly. *J Clin Endocrinol Metab* 2007; **92:** 4598–4601.

Preparations

Proprietary Preparations (details are given in Part 3)

Arg.: Somavert; ***Belg.:*** Somavert; ***Braz.:*** Somavert; ***Cz.:*** Somavert; ***Denm.:*** Somavert; ***Fin.:*** Somavert; ***Fr.:*** Somavert; ***Ger.:*** Somavert; ***Gr.:*** Somavert; ***Irl.:*** Somavert; ***Ital.:*** Somavert; ***Neth.:*** Somavert; ***Norw.:*** Somavert; ***Port.:*** Somavert; ***Spain:*** Somavert; ***Swed.:*** Somavert; ***UK:*** Somavert; ***USA:*** Somavert.

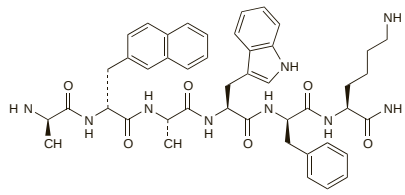
Pralmorelin Dihydrochloride *(USAN, rINNM)* ⊗

Dihidrocloruro de pralmorelina; GHRP-2 (pralmorelin); Growth Hormone-releasing Peptide-2 (pralmorelin); KP-102 (pralmorelin); Pralmoréline, Dichlorhydrate de; Pralmorelini Dihydrochloridum; WAY-GPA-748. D-Alanyl-3-(2-naphthyl)-D-alanyl-L-alanyl-L-tryptophyl-D-phenylalanyl-L-lysinamide dihydrochloride.

Пральморелина Дигидрохлорид

$C_{45}H_{55}N_9O_6$,2HCl = 890.9.

CAS — 158861-67-7 (pralmorelin); 158827-34-0 (pralmorelin dihydrochloride).



(pralmorelin)

Profile

Pralmorelin is a small synthetic peptide that stimulates the release of growth hormone. It is under investigation in the diagnosis of growth hormone deficiency and for the treatment of growth retardation (p.1798).

◊ References.

1. Mericq V, *et al.* Effects of eight months treatment with graded doses of a growth hormone (GH)-releasing peptide in GH-deficient children. *J Clin Endocrinol Metab* 1998; **83:** 2355–60.
2. Mahajan T, Lightman SL. A simple test for growth hormone deficiency in adults. *J Clin Endocrinol Metab* 2000; **85:** 1473–6.
3. Gondo RG, *et al.* Growth hormone-releasing peptide-2 stimulates GH secretion in GH-deficient patients with mutated GH-releasing hormone receptor. *J Clin Endocrinol Metab* 2001; **86:** 3279–83.

Somatomedins ⊗

IGFs; Insulin-like Growth Factors; Somatomedinas; Sulphation Factors.

Description. Somatomedins are a group of polypeptide hormones related to insulin and usually known individually as insulin-like growth factors (IGFs), with molecular weights of about 7000 to 8000. They are synthesised in the liver, kidney, muscle, and other tissues.

Mecasermin *(BAN, USAN, rINN)* ⊗

CEP-151; FK-780; IGF-1; IGF-I; Insulin-like growth factor I (human); Mecasermina; Mécasermine; Mecaserminum; rhIGF-1; Somatomedin C.

Меказермин

$C_{331}H_{512}N_{94}O_{101}S_7$ = 7648.6.

CAS — 68562-41-4; 67763-96-6.

ATC — H01AC03.

ATC Vet — QH01AC03.

Mecasermin Rinfabate *(USAN, rINN)* ⊗

Mecasermina rinfabato; Mécasermine Rinfabate; Mecaserminum Rinfabas; rhIGF-I/rhIGFBP-3. A complex of insulin-like growth factor I (human) with insulin-like growth factor-binding protein IGFBP-3 (human).

Меказермин Ринфабат

CAS — 478166-15-3.

ATC — H01AC05.

ATC Vet — QH01AC05.

Adverse Effects and Precautions

Since the somatomedins are considered to be responsible for many of the actions of growth hormone similar adverse effects (see p.1800) might be expected, and have been seen with mecasermin. Hypoglycaemia is common but symptoms can generally be avoided if mecasermin is given within 20 minutes of food. Tonsillar hypertrophy can develop; patients should be monitored for complications such as snoring, sleep apnoea, and chronic middle ear effusions. Thickening of the soft tissues of the face can also occur. Cardiomegaly and valvulopathy have been reported in a few patients. Although a relationship between cardiac changes and mecasermin therapy has not been confirmed, echocardiogram monitoring has been recommended. Injection site hypertrophy may occur, but can be avoided or resolved by proper rotation of injection sites.

Effects on the eyes. For concerns about an increased risk of retinopathy in diabetic patients receiving mecasermin, see under Diabetes Mellitus, below.

Intravenous administration. Syncope in the absence of hypoglycaemia has been reported in patients given mecasermin by intravenous bolus, accompanied in some cases by convulsions, asystole, bradycardia, hypotension, or dizziness.[1] Reports appear to have ceased since recommendations that mecasermin should not be given intravenously at rates greater than 24 micrograms/kg per hour. Arthralgia, nerve palsies, and hypo-

phosphataemia and dyspnoea have been associated with high-dose intravenous bolus therapy.[2] Mecasermin is now given by subcutaneous injection (see Uses and Administration, below).

1. Malozowski S, Stadel B. Risks and benefits of insulin-like growth factor. *Ann Intern Med* 1994; **121:** 549.
2. Usala A-L. Risks and benefits of insulin-like growth factor. *Ann Intern Med* 1994; **121:** 550.

Pharmacokinetics

After subcutaneous injection, mecasermin has a bioavailability of almost 100% in healthy subjects. In the circulation it is bound to 6 binding proteins, with more than 80% bound to binding protein 3 (IGFBP-3). However, IGFBP-3 is greatly reduced in patients with severe primary IGF-I deficiency, such that there is an increase in the clearance of mecasermin. Mecasermin is metabolised in the liver and the kidney, and has a terminal half-life of about 6 hours in children with severe primary IGF-I deficiency.

After subcutaneous injection of mecasermin rinfabate in children with severe primary IGF-I deficiency, the half-life of free IGF-I is prolonged to about 13 hours and IGFBP-3 has a half-life of about 54 hours.

Uses and Administration

The somatomedins are a group of polypeptide hormones, some of which are involved in mediating the effects of growth hormone in the body. Insulin-like growth factor I (IGF-I) is believed to be responsible for many of the anabolic effects of growth hormone. It is secreted primarily by the liver, regulated principally by growth hormone and insulin secretion; IGF-I may also be secreted in other tissues, where it may exert local hormonal (paracrine) effects. In the circulation, IGF-I is almost completely protein bound; 6 binding proteins have been identified and production of some of these is also under the control of growth hormone. In addition to its anabolic effects IGF-I, which is structurally related to insulin, also has potent hypoglycaemic properties.

IGF-I is available as mecasermin, a product of recombinant DNA technology. It is used in the treatment of growth failure in children with severe primary IGF-I deficiency (such as Laron-type dwarfism, in which an abnormality of the growth hormone receptor results in an inability to secrete endogenous IGF-I—see Growth Retardation, below). It may also be used in children with growth hormone gene deletion who have developed neutralising antibodies to growth hormone. However, it is not recommended for children less than 2 years of age because of a lack of data. The starting dose of mecasermin is 40 to 80 micrograms/kg twice daily by subcutaneous injection. After 1 week, if this dose is tolerated, it may be increased by 40 micrograms/kg per dose to a maximum of 120 micrograms/kg twice daily. Mecasermin should be given within 20 minutes before or after food, to minimise hypoglycaemia. The dose should be reduced if hypoglycaemia occurs with recommended doses despite adequate food intake. If the patient is unable to eat for any reason, the dose of mecasermin should be withheld.

Mecasermin rinfabate is a recombinant protein complex of IGF-I and its most abundant binding protein, insulin-like growth factor binding protein-3 (IGFBP-3). It is under investigation in the management of amyotrophic lateral sclerosis and myotonic muscular dystrophy.

IGF-II (IGF-2) is thought to play an important role in fetal growth, although its function in adults is uncertain. It is closely related in structure to IGF-I, but is not under the control of growth hormone.

◊ General reviews.

1. Laron Z. Somatomedin-1 (insulin-like growth factor-I) in clinical use: facts and potential. *Drugs* 1993; **45:** 1–8.
2. Bondy CA, *et al.* Clinical uses of insulin-like growth factor I. *Ann Intern Med* 1994; **124:** 593–601.
3. Le Roith D. Insulin-like growth factors. *N Engl J Med* 1997; **336:** 633–40.
4. Laron Z. Insulin-like growth factor 1 (IGF-1): a growth hormone. *Mol Pathol* 2001; **54:** 311–16.
5. Kemp SF, *et al.* Efficacy and safety of mecasermin rinfabate. *Expert Opin Biol Ther* 2006; **6:** 533–8.

Diabetes mellitus. Patients with type 1 diabetes mellitus (p.431) have low circulating levels of insulin-like growth factor I (IGF-I), and there has been considerable interest in the therapeutic potential of mecasermin in these patients.[1] Randomised studies[2,3] have found that mecasermin 40 micrograms/kg once or twice daily by subcutaneous injection improves metabolic control in the short term when added to insulin therapy. Insulin doses can also be reduced in some patients.[3] However, the role of IGF-I in the development of diabetic complications is unclear and there has been some concern about its proliferative effect in diabetic retinopathy.[1] Optic disc swelling and worsening of retinopathy have been reported with higher doses of mecasermin.[3] Mecasermin rinfabate is being studied in an attempt to limit adverse effects such as oedema, jaw pain, headache, Bells' palsy, and retinal oedema.[4]

Mecasermin has also been reported to improve insulin sensitivity and to lower concentrations of insulin, glucose, and C-peptide in patients with syndromes of severe insulin resistance or type 2 diabetes mellitus.[1]

1. Thrailkill KM. Insulin-like growth factor-I in diabetes mellitus: its physiology, metabolic effects, and potential clinical utility. *Diabetes Technol Ther* 2000; **2:** 69–80.
2. Acerini CL, *et al.* Randomised placebo-controlled trial of human recombinant insulin-like growth factor I plus intensive insulin therapy in adolescents with insulin-dependent diabetes mellitus. *Lancet* 1997; **350:** 1199–1204.
3. Thrailkill KM, *et al.* Cotherapy with recombinant human insulin-like growth factor I and insulin improves glycemic control in type 1 diabetes. *Diabetes Care* 1999; **22:** 585–92.
4. Clemmons DR, *et al.* The combination of insulin-like growth factor I and insulin-like growth factor-binding protein-3 reduces insulin requirements in insulin-dependent type 1 diabetes: evidence for in vivo biological activity. *J Clin Endocrinol Metab* 2000; **85:** 1518–24.

Growth retardation. Mecasermin is used in the treatment of Laron-type dwarfism (growth hormone resistance), a form of growth retardation (p.1798). Doses of 150 to 240 micrograms/kg daily, given subcutaneously, have stimulated linear growth and normalised biochemical abnormalities in these patients.[1] During long-term use, growth hormone and insulin are persistently suppressed, preventing hypoglycaemia and stabilising blood-glucose concentrations. There is also an increase in the production of the insulin-like growth factor binding protein-3, which prolongs the half-life of mecasermin so that a progressive dose reduction is needed to avoid overdosage and adverse effects.[2]

1. Laron Z. The essential role of IGF-I: lessons from the long-term study and treatment of children and adults with Laron syndrome. *J Clin Endocrinol Metab* 1999; **84:** 4397–4404.
2. Laron Z. Laron syndrome (primary growth hormone resistance or insensitivity): the personal experience 1958–2003. *J Clin Endocrinol Metab* 2004; **89:** 1031–44.

Motor neurone disease. Mecasermin is under investigation for the management of amyotrophic lateral sclerosis, a form of motor neurone disease (p.2380). Mecasermin may have modest benefits but there is not enough available evidence to assess conclusively.[1]

1. Mitchell JD, *et al.* Recombinant human insulin-like growth factor I (rhIGF-I) for amyotrophic lateral sclerosis/motor neuron disease. Available in The Cochrane Database of Systematic Reviews; Issue 4. Chichester: John Wiley; 2007 (accessed 21/08/08).

Osteoporosis. Mecasermin[1] and mecasermin rinfabate[2] have been investigated as stimulants of bone formation in osteoporosis (p.1084). Some beneficial effects on bone density have been reported.

1. Grinspoon S, *et al.* Effects of recombinant human IGF-I and oral contraceptive administration on bone density in anorexia nervosa. *J Clin Endocrinol Metab* 2002; **87:** 2883–91.
2. Boonen S, *et al.* Musculoskeletal effects of the recombinant human IGF-I/IGF binding protein-3 complex in osteoporotic patients with proximal femoral fracture: a double-blind, placebo-controlled pilot study. *J Clin Endocrinol Metab* 2002; **87:** 1593–9.

Preparations

Proprietary Preparations (details are given in Part 3)
Cz.: Increlex; ***Fr.:*** Increlex; ***UK:*** Increlex; ***USA:*** Increlex; Iplex†.

Somatorelin *(rINN)* ⊗

GHRF; GHRH; GRF; GRF-44; Growth Hormone-releasing Factor (Human); Growth Hormone-releasing Hormone; Somatoliberin; Somatoreliini; Somatorelina; Somatoréline; Somatorelinum.

Соматорелин

$C_{215}H_{358}N_{72}O_{66}S$ = 5039.7.

CAS — 83930-13-6.

ATC — V04CD05.

ATC Vet — QV04CD05.

Sermorelin Acetate *(BANM, USAN, rINNM)* ⊗

Acetato de sermorelina; GRF(1-29)NH_2 (sermorelin); Growth Hormone-releasing Factor (Human)-(1-29)-peptide Amide (sermorelin); Sermoréline, Acétate de; Sermorelini Acetas. Tyr-Ala-Asp-Ala-Ile-Phe-Thr-Asn-Ser-Tyr-Arg-Lys-Val-Leu-Gly-Gln-Leu-Ser-Ala-Arg-Lys-Leu-Leu-Gln-Asp-Ile-Met-Ser-Arg-NH_2 acetate hydrate.

Серморелина Ацетат

$C_{149}H_{246}N_{44}O_{42}S.xC_2H_4O_2.yH_2O$ = 3357.9 (sermorelin).

CAS — 86168-78-7 (sermorelin); 114466-38-5 (sermorelin acetate).

ATC — H01AC04; V04CD03.

ATC Vet — QH01AC04; QV04CD03.

Adverse Effects and Precautions

Facial flushing and pain at the injection site may occur after injection of sermorelin acetate. Headache, nausea and vomiting, dysgeusia, and tightness in the chest have also been reported. Antibodies to somatorelin may develop on repeated use.

Sermorelin should be used with care in patients with epilepsy. Uncontrolled hypothyroidism, obesity, hyperglycaemia, or elevated plasma fatty acids may impair response to sermorelin. Sermorelin should not be used to treat growth retardation in children whose growth hormone response to stimulation tests is inadequate. Treatment should cease once the epiphyses have closed.

Interactions

Drugs that affect the secretion of growth hormone may interfere with the diagnostic efficacy of somatorelin or sermorelin; these include growth hormone itself, somatostatin, insulin, corticosteroids, and cyclo-oxygenase inhibitors such as aspirin and indometacin. Growth hormone concentrations may be raised by clonidine and levodopa. The response to somatorelin or sermorelin may also be reduced by antimuscarinic drugs such as atropine, and by antithyroid drugs such as propylthiouracil.

Uses and Administration

Somatorelin is a peptide, secreted by the hypothalamus, that promotes the release of growth hormone from the anterior pituitary. It exists as 44-, 40-, and 37-amino acid peptides; the 44-amino acid form may possibly be converted to the smaller forms but all are reported to be active, the activity residing in the first 29 amino acid residues. Sermorelin is a synthetic peptide corresponding to the 1–29 amino acid sequence of somatorelin.

Sermorelin acetate is used for the diagnosis of growth hormone deficiency. The usual dose is the equivalent of sermorelin 1 microgram/kg by intravenous injection in the morning after an overnight fast. A normal response to sermorelin indicates that the somatotrophs are functional, but does not exclude growth hormone deficiency due to hypothalamic dysfunction; to establish a diagnosis it must be used with other tests. Somatorelin acetate is used similarly.

Sermorelin has also been used for the treatment of growth hormone deficiency in children; doses equivalent to 30 micrograms/kg, as the acetate, may be given once daily at bedtime by subcutaneous injection.

Sermorelin has also been tried as an adjunct to gonadotrophin therapy in the induction of ovulation and has been investigated in the treatment of HIV-associated wasting.

Diagnostic use. Somatorelin (in its 40- or 44-amino acid forms) has been used in the assessment of growth hormone deficiency.[1-3] It has usually been given as a single intravenous injection in doses of 1 microgram/kg or total doses of up to 200 micrograms. Subsequent normal or exaggerated increases in serum-growth hormone concentrations have occurred in healthy subjects,[1,2] and in patients with hypothalamic tumours[3] or acromegaly,[2] but not in patients with hypopituitarism.[2] A synthetic 29-amino-acid sequence of somatorelin, sermorelin acetate is now available for the diagnosis of growth hormone deficiency. However, it has been suggested that the test is not useful for screening as it does not test the hypothalamic-pituitary axis, and that it should not be used in routine clinical practice.[4] The use of