Iodine supplements now funded

From July 1 2010 potassium iodate 150 µg tablets (Neurokare) have been fully funded on the Pharmaceutical Schedule in New Zealand.

The decision to fund this medicine came after a Ministry of Health recommendation for an all-purpose iodine supplement.[1] Neurokare is being fully funded without any restrictions. This means that it is able to be prescribed for any appropriate treatment regimen such as iodine deficiency or women planning a pregnancy.

Who should iodine supplements be considered for?

- Pregnant women
- People with iodine deficiency

Iodine is an essential nutrient although only very small amounts are required. It is an important constituent of thyroid hormones which maintain the body's metabolic state and support growth and development in children. Iodine is particularly important for normal brain development in the foetus as well as in infants. Moderate to severe iodine deficiency in infants has been shown to adversely effect hearing capacity, motor and cognitive function.[2]

Iodine deficiency can affect anyone, but it is particularly prevalent in pregnant women, due to changes in hormone function affecting the thyroid gland. A nationwide survey in 2005 of the iodine status of 170 pregnant women found that most had a moderate iodine deficiency (7% had goitre). A 2001 study found that the average dietary intake of iodine for pregnant women was between 60 and 70 µg.[3] The recommended daily intake of iodine for women during pregnancy is 220 µg (Table 1), therefore if a 150 µg tablet supplement is prescribed in addition to dietary sources of iodine, most pregnant women would reach the desired level of intake.

Iodine supplements may also be prescribed to other people who are suspected to have an iodine deficiency, who are not likely to be meeting daily requirements through diet alone.

Table 1: Recommended daily iodine requirements in New Zealand[4]

Age group	Recommended dietary intake (µg/day)	Upper level of intake (µg/day)
1–3 years	90	200
4–8 years	90	300
9–13 years	120	600
14–18 years	150	900
Adults 19+	150	1100
Pregnancy		
14–18 years	220	900
19–50 years	220	1100
Lactation		
14–18 years	270	900
19–50 years	270	1100

Dietary sources of iodine

Natural dietary sources of iodine include seafood (fish, shellfish and seaweed), milk and eggs (Table 2). The iodine content of vegetables, fruits and grains grown in New Zealand tends to be low due to a low iodine content of the soil.

Iodine is added to salt to increase dietary intake. It is recommended to choose iodised salt when using salt, but not to increase salt intake overall.[5] All bread sold in New Zealand (except organic and unleavened) now contains iodised salt.

Table 2: Average iodine content in food [6]

Food product	Total iodine in µg per 100 g (average)	How much food does that represent?
Yoghurt (low fat)	67	Half a cup
Milk (low fat)	69	Half a cup
Egg	160	1 egg, boiled
White fish	35	1 medium sized fillet
Salmon	50	1 can, drained
Cheese	40	1 cup grated
Rice	33	1 cup cooked, fluffed
Iodised salt	250 – 650	Half a cup*

* The recommended daily intake of salt is around one teaspoon which would contain 12.5 – 32.5 µg iodine

N.B. The iodine content of New Zealand sourced food is likely to be slightly lower than values in the table, due to poor iodine content in the soil.

For more information on iodine supplementation and deficiency in pregnant women see "Nutrition and supplements during pregnancy" (BPJ 18, Dec 2008).

For more information on supplements in general, including iodine, see "Vitamins and minerals: dietary sources, supplements and deficiencies" (BPJ 15, Aug 2008).

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Zoledronic acid funded with Special Authority from September 1 2010

Zoledronic acid, a bisphosphonate used for the treatment of osteoporosis and other conditions, will be fully funded under Special Authority from September 1 2010.[1]

Zoledronic acid (Aclasta) will be available as a 5 mg/100 mL solution to be given as a slow (>15 min) intravenous infusion no more than once a year. The need for intravenous administration may limit its use in general practice, however it is likely to be increasingly used in secondary care. Oral bisphosphonates should be stopped prior to the use of intravenous zoledronic acid.

Zoledronic acid (Aclasta 5 mg injection) is recommended for patients in whom compliance with oral bisphosphonate treatment is likely to be poor. It is indicated for the treatment of:[2]

- Paget's disease of the bone

- Osteoporosis (for both men and post-menopausal women)
- Prevention of glucocorticosteroid- induced osteoporosis
- Prevention of clinical fractures in patients after low-trauma hip fracture

Special Authority criteria vary depending on the specific indication. From September 1 2010, the schedule will be amended so that patients who have Special Authority approval for the use of alendronate will also have special authority for zoledronic acid.

Another brand of zoledronic acid (Zometa 4 mg injection) is indicated for the treatment, in secondary care, of some cancers (e.g. multiple myeloma, secondary bone metastases) and hypercalcaemia of malignancy.[3]

Zoledronic acid may impair renal function

Renal impairment, and rarely renal failure, have been reported in patients treated with zoledronic acid.[4]

People with pre-existing renal impairment or dehydration, or those taking medicines such as NSAIDs or diuretics, are at increased risk. In addition, rapid infusion (less than 15 minutes) or high doses of zoledronic acid may also cause renal impairment.

To prevent adverse effects on renal function it is recommended that:

- Zoledronic acid should not be used in patients with renal impairment (creatinine clearance < 35 mL/min)
- Renal function should be checked prior to administration, particularly in at-risk patients
- Patients must be adequately hydrated prior to administration, particularly if the patient is taking a diuretic or is elderly (at least 500 mL water before and after infusion)
- Zoledronic acid be used with caution in patients who are taking other medicines that may impair renal function
- An infusion of zoledronic acid should be given over at least 15 minutes and the dose should not exceed 5 mg once per year

Vitamin D and calcium supplementation may be required

An adequate dietary intake of calcium and vitamin D is recommended for all patients with osteoporosis. Supplementation may be required if dietary intake is inadequate.

Zoledronic acid is contraindicated in the presence of hypocalcaemia. Measurement of serum calcium is advised in patients who may be at risk, e.g. patients with vitamin D deficiency, after thyroid or parathyroid surgery, or with calcium malabsorption.[2]

Zoledronic acid administration may cause transient hypocalcaemia and patients with Paget's disease of the bone may be particularly at risk.[2] The risk of hypocalcaemia is highest within ten days of zoledronic infusion. Hypocalcaemia may be symptomatic in some patients and present with numbness or tingling, especially around the mouth, and muscle spasms or cramps.

It is recommended that patients with Paget's disease of the bone have an adequate calcium and vitamin D intake and may require supplemental calcium for 10–14 days following zoledronic acid infusion.

Administration of zoledronic acid may cause flu-like symptoms

Flu-like symptoms (fever, headache, muscle/bone pain) may be experienced by some people in the first few days following administration of zoledronic acid. Symptoms are usually mild and resolve within a few days of onset. The use of paracetamol immediately following an infusion of zoledronic acid may reduce the incidence of these flu-like symptoms.[2]

Osteonecrosis of the jaw is a rare complication of treatment

There is a rare association between all bisphosphonates (particularly those given intraveneously) and osteonecrosis of the jaw. This risk may be increased in patients with poor oral hygiene, those aged over 60 years and patients requiring concurrent treatment with chemotherapy or costicosteroids. Cases are often reported in association with invasive dental procedures so it is recommended that if possible, patients receiving bisphosphonate treatment avoid such procedures. Patients with risk factors should be advised to maintain good oral hygiene and have a dental examination with preventive dentistry if required, prior to treatment with bisphosphonates.[2]

Practical considerations for primary care

Intravenous administration of zoledronic acid in primary care is likely to require:

- Identification of patients who may benefit, e.g. patients who cannot tolerate oral bisphosphonates due to gastrointestinal problems or patients who are unable to sit or stand upright for the 30 minutes required after an oral bisphosphonate[5]
- Patient education to ensure adequate hydration prior to, and following, administration
- Pre-infusion check of serum creatinine and calcium
- A time investment of 30–45 minutes on the day of treatment
- Availability of IV equipment for the infusion and insertion of an IV cannula
- Involvement of both GP and practice nurse
- Monitoring of the patient during the infusion (which must be slow – i.e. over 15 minutes)

For more information on bisphosphonates and osteoporosis see BPJ 17, October 2008; “Prevention of osteoporosis”

References

1. Pharmaceutical Management Agency (PHARMAC). Zoledronic acid funding approved. August 2010. Available from: www.pharmac.govt.nz (Accessed August, 2010).
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Atorvastatin available without special authority

From September 1 2010 atorvastatin tablets (Lipitor) will be available for prescription, fully funded, without the requirement for special authority.[1] A generic form of atorvastatin was to replace the current listed brand, however this will no longer be occurring.

When to consider prescribing atorvastatin

With respect to LDL lowering effect, atorvastatin is approximately twice as potent as simvastatin, i.e. 10 mg atorvastatin is equivalent to 20 mg simvastatin. At equivalent doses, some patients may tolerate atorvastain better than simvastatin.

First-line treatment for primary prevention is simvastatin 20–40 mg. If more intensive statin treatment is required, e.g. secondary prevention, a dose of up to 80 mg simvastatin may be required.[2] Atorvastatin, e.g. 40 mg, may be preferred especially if simvastatin is poorly tolerated.

Atorvastatin may also be preferred for people with familial hypercholesterolemia or with extremely elevated serum lipid levels. It is also appropriate for use in people with reduced renal function as no dose adjustment is required.

For more information about the use of statins, see Page 16.

References

1. Pharmaceutical management agency (PHARMAC). Atorvastatin listing changes. August 2010. Available from: www.pharmac.govt.nz (Accessed August, 2010).

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