



NHSGGC Medicines Information MEMORANDUM

To: GGC Medical, Nursing and Pharmacy Staff

From: GGC Medicines Information Service

Date: December 2019

Subject: Unlicensed levothyroxine injection for replacement therapy in patients who are nil-by-mouth

Background

The GGC Medicines Formulary now states that for patients who are nil-by-mouth for more than 5 days, unlicensed IV levothyroxine can be used for replacement therapy.

The recommendations in this memo are applicable to adult and paediatric patients. For use in neonates, please discuss with a NICU pharmacist.

Note that for patients with myxoedema coma, IV liothyronine remains the recommended treatment.

Dosage

The relative bioavailability between oral and IV levothyroxine is estimated to be from 48% to 74%, therefore a dosage reduction is required when giving IV replacement therapy.

The IV dose should be reduced to 70% or less of the usual oral dose. For example, if a patient was receiving 100 micrograms of oral levothyroxine the dose of IV levothyroxine would be 70 micrograms. See table below for suggested dose conversions for ease of administration.

Oral levothyroxine dose	IV levothyroxine dose
50 micrograms	35 micrograms
75 micrograms	50 micrograms
100 micrograms	70 micrograms
125 micrograms	85 micrograms
150 micrograms	100 micrograms
175 micrograms	120 micrograms
200 micrograms	140 micrograms

If you require any further information or advice please contact your clinical pharmacist or medicines information.

Telephone: 0141 211 4407 Fax: 0141 552 8170 E-mail: Medinfo@ggc.scot.nhs.uk

Preparation and Administration

Different brands of IV levothyroxine may vary in the recommended method of reconstitution and administration. ***Please follow instructions included in the package insert as these may be product specific.***

Levothyroxine sodium for injection is often supplied as a powder. For reconstitution, most sources recommend the use of 5ml of sodium chloride 0.9%.

In general terms, levothyroxine sodium injection may be administered by intravenous injection or intravenous infusion.

If more information is required, please discuss with a pharmacist.

Monitoring

Intravenous administration of levothyroxine is associated with cardiac complications particularly in the elderly and in patients with an underlying cardiac condition. This includes arrhythmias, tachycardia, myocardial ischaemia/ infarction or worsening of congestive heart failure.

There is no indication to increase the frequency of thyroid function tests monitoring unless clinically justified.