Ciclosporin - UC Only - Summary Clinical Guideline

Reference No: CG-T/2014/208

Ciclosporin should only normally be started on consultant advice.

Before starting IV Ciclosporin:

- Blood pressure
- Urinalysis
- Check blood results before starting ciclosporin for the following
  U+Es as drug can cause renal impairment and high potassium levels
  Magnesium as drug can cause low magnesium levels
  Cholesterol as drug causes high cholesterol levels

The risk of seizures is increased in patients with a low cholesterol (<3.0 mmol/l or magnesium (<0.50 mmol/l). *Neoral oral solution,* which is an oral micro-emulsion of ciclosporin (dosed at 5-6 mg/kg) is a safe alternative as it is not associated with the seizures provoked by a chromophore in the intravenous preparation[1]. The IV preparation should be first line for all other patients, as the vast majority of the evidence is based on this preparation.

Other UC treatment should be continued whilst on this drug

Dose:

2mg/kg/day given by continuous IV infusion for up to 10 days. Doses up to 125mg should be given in 100ml sodium chloride 0.9%, doses above this in 250 ml sodium chloride 0.9%, over 24 hours, through a dedicated cannula (can be given peripherally or centrally)[2].

Doses should be rounded to the nearest 10mg for ease of measurement.

Dosing should be based on **ideal body weight**[3]

To prescribe on iCM:
In the *Dose* box enter the dose for 24 hours (i.e. 2mg/kg rounded to nearest 10mg)
In the *Frequency* box enter *once daily at* and choose the start time (may need to use the user schedule function if desired start time isn't in the drop-down list).
In the *Infusion Duration* over box enter *24 hours.*

Monitoring:

- Check levels after 36-48 hours. The level must be taken from the opposing arm to that with the infusion going in. 5ml of blood is required for the level to be taken, this is sent in a potassium-EDTA tube (lilac top, same as FBC) to biochemistry[6,7]

- Adjust the dose if necessary to achieve drug level of 100-200 micrograms/litre[1,2] (see table for details of how to adjust doses). Thereafter levels should be taken twice weekly whilst on intravenous therapy.

- Continue infusion whilst waiting for levels to come back as they can take a few days depending on the day of the week the sample is taken. Ciclosporin samples are only tested twice weekly, on Tuesdays and Fridays. Pathology require samples being received in the laboratory before 10 am on the Tuesday or Friday to ensure analysis is undertaken on that day.

- Bloods should be taken at least alternate days to monitor for nephrotoxicity, hyperkalaemia, liver toxicity, hypomagnesaemia.

Cautions[8]

Use with caution in patients with GFR<30ml/min – seek advice from renal team before starting (drug not renally cleared but very nephrotoxic).

Use with caution in infections, history of seizures and malignancies, see BNF for more information.

This drug has several interactions see Full Clinical Guideline for further information

Side Effects[8]

- Anaphylaxis (monitor during the first 30 minutes of infusion)

- Nephrotoxicity (one third of patients, monitor at baseline and at least alternate days. Reduce dose by 25% if serum creatinine rises above 30% above baseline.)

- Hyperkalaemia (monitor)

- Liver toxicity (monitor, reduce ciclosporin dose by 25% if any LFT values double from baseline)

- Hypertension (treat if necessary, reduce ciclosporin dose by 25% if BP remains over 150/90 despite antihypertensive treatment, discontinue if hypertension remains despite dose reduction)

- Hypercholesterolaemia

Other effects include tremor, parasthesia, GIT disturbances, hypetrichosis, gingival hypertrophy, convulsions (rare), nausea, opportunistic infections, hyperglycaemia.

Dose adjustments

Level	Action (IV dosing)	Action (oral dosing)
<100	Increase daily dose by 20mg, recheck levels in two days	Increase daily dose by 25mg BD, review in one week
100-200	Continue	Continue
200-300	Decrease daily dose by 20mg, recheck levels in two days	Decrease daily dose by 25mg BD, review in one week
>300	Decrease daily dose by 40mg, recheck levels in two days	Decrease daily dose by 50mg BD, review in one week
>500	Stop and recheck levels	Stop and recheck levels