Dobutamine

Contents

Purpose

To ensure the correct administration of Dobutamine by authorised personnel.

Scope

- CDHB IV Certificated staff competent in ECG analysis
- Medical Practitioners

Associated documents

- Cardiology IV Medication & IV Infusion Protocols, 2014
- Notes on Injectable Drugs 6th edition 2010
- The Blue Book 12th edition

Use

Positive inotrope: low cardiac output failure. Usual dose range 2.5 microg/kg/min to 10 microg/kg/min. Rate and duration of

administration is titrated according to heart rate, presence of ectopic activity, blood pressure and urine flow.

Important information

- Must be administered under continuous ECG monitoring via an electronic infusion pump or syringe.
- Must be supervised by personnel trained to interpret an ECG correctly and act upon it.
- Medical staff must document any exception to this in the patient's clinical notes.
- Use a 20g cannula for administration of this medication.
- Infuse according to weight-based dose scale.
- Continuous infusion is the only method of administration. The infusion is stable for 24 hours and should be discarded if not used within this time.
- The infusion must not be interrupted for any reason e.g. showering.
- When fluid volume is of concern, e.g. Congestive heart failure, the prescriber can consider administering the appropriate dose via a syringe driver. Alternatively a double-strength infusion protocol can be utilised (Refer to Cardiology IV Medication & IV Infusion Protocols, 2014).

Medical officer's responsibilities include

- Ensuring informed consent has been obtained from the patient.
- When prescribing Dobutamine the prescription will include:
  - Maximum increase in systolic BP
  - Maximum increase in heart rate
  - Maximum dose
  - Rate and timing (micrograms per kilogram per min) of dosage titration is area specific please refer to either local policy or Notes on Injectable drugs.

Procedural considerations

- Refer to the Roles Responsibilities and IV policy for checking, patient identification, administration and documentation requirements.
- Check the prescribed mL per hour equates to the microg/kg/min prescribed.

- Ensure the patient has:
  - Their current weight documented to allow for appropriate calculations using the dosage chart (refer to Notes on Injectable drugs).
  - Continuous cardiac monitoring and hourly IV site assessments and phlebitis scores are performed.
  - Diabetic patients require Q4H blood glucose monitoring for the course of the infusion.
- A full set of baseline observations are required to be documented.
- Observations are monitored at:
  - After 10 minutes,
  - After one hour
  - and then at least Q4H
  - or as the EWS management pathway indicates

Side effects

- Hypotension, especially if the patient is hypovolaemic. This requires correcting prior to commencement of the infusion. Hypertension with an increase in systolic pressure (10-20 mmHg) and increase in heart rate 5-15 bpm. These effects are generally reversed by a reduction in dosage (elimination half-life = 2 minutes).
- Ventricular ectopic activity may be precipitated or exacerbated in a dose-related fashion in about 5% of patients.
- Dobutamine enhances atrioventricular conduction. Therefore patients with atrial fibrillation are at risk of developing a rapid ventricular response and may require digitalization prior to therapy.
- Nausea, vomiting, dysgeusia (altered taste sensations), chest pain, shortness of breath, urinary urgency and dermal necrosis.
- Possible headache and fatigue.
- Side effects would usually necessitate slowing or discontinuing the infusion according to medical orders.

Considerations

- Dobutamine is sometimes used in combination with dopamine.
- Infusions have been continued for up to 3-5 days although tolerance has been reported with use >72 hours.

- Combined with beta-blockers, dobutamine will predominantly cause alpha effects, i.e. vasoconstriction, hypertension.

Weaning

- Weaning should be gradual, as a sudden dramatic drop in blood pressure is relatively common when the infusion is discontinued abruptly.
- A reduction of 2.5 microg/kg/min at hourly intervals, checking blood pressure with each down-titration, would usually be considered appropriate, however, wean as per medical instructions.

Measurement/Evaluation

Incident management system

Canterbury and West Coast IV Link Clinical Practice Observation programme

References

MedSafe data sheet for DBL Dobutamine Hydrochloride Injection 2008

Procedure Owner	Cardiology Services Nurse Educator
Procedure Authoriser	Chief Medical Officer & Executive Director of Nursing
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