Protocol for the administration of DigiFAB®

It is essential to consult a poisons information service, e.g. Toxbase at http://www.toxbase.org (password or registration required) for full details of the management of cardiac glycoside toxicity.

Note: Separate information in Toxbase for cardiac glycosides and pharmaceutical digoxin

If cardiac arrest is imminent, DigiFAB may be administered by IV injection (unlicensed) over 3-5 minutes, but this method of administration is not recommended since it may be associated with increased risk of adverse effects (e.g. allergic reactions).
Usual method of administration is IV infusion – see DigiFAB monograph

DigiFAB® for poisoning from cardiac glycosides other than pharmaceutical digoxin e.g.foxglove (digitalis)

High doses are needed to make up for lack of specificity of the antidote.

Cardiac arrest due to cardiac glycoside toxicity

Urgently administer Digifab® as an IV bolus (unlicensed); **repeat as necessary** after 15 minutes:

Weight (adults and children)	**DigiFAB® dose**
>40 kg	10 vials (400 mg)
20-40 kg	4 vials (160 mg)
≤20 kg	2 vials (80 mg)

For less severe poisoning with cardiac glycosides other than digoxin: Use half the above doses; repeat as necessary after 15 minutes

DigiFAB® for poisoning from pharmaceutical digoxin

The dose depends on the clinical situation (A-E below) and on whether plasma digoxin concentration is available

A: Cardiac arrest due to digoxin toxicity

Urgently administer Digifab® as an IV bolus (unlicensed); **repeat as necessary** after 15 minutes:

Weight (adults and children)	**DigiFAB® dose**
>40 kg	5 vials (200 mg)
20-40 kg	2 vials (80 mg)
≤20 kg	1 vial (40 mg)

Estimate the dose of DigiFAB® required for full neutralisation

Round up to the nearest vial

When digoxin concentration is available

Dose for full neutralisation (no. of vials) = [serum digoxin concentration (ng/mL)* x weight (kg)]
100

***NB** The biochemistry results in CUH report digoxin levels in microgram per litre. These must be converted to nanograms per mL to calculate the dose of Digifab® required.

Conversion Factor: 1 microgram per litre = 1 nanogram per mL

OR

When only ingested dose is available

Dose for full neutralistion (no. of vials) = Amount of digoxin ingested (mg) x 1.6

Strength of Digoxin tablets = 62.5, 125, 250 **micrograms**

B: Acute Digoxin overdose on top of usual therapy

e.g. accidental or deliberate overdose when already taking digoxin

- Only administer the **full** dose of Digifab® if the dose of digoxin ingested is known.

Otherwise:

- Administer **half** the dose calculated using the serum digoxin concentration.
- Monitor the patient for 6-12 hours if there is a full response.
- Give the remainder of the calculated dose if no response within 2 hours.

C: Acute overdose in digoxin-naïve patient

e.g. accidental or deliberate overdose when patient does not regularly take digoxin

- Administer **half** the calculated dose initially.
- Monitor the patient for 6-12 hours if there is a full response.
- Give the remainder of the calculated dose if no response within 2 hours.

Rationale: In acute poisoning the serum digoxin concentration does not reflect the total body load and complete neutralisation is not needed in digoxin-naïve patients.

D: Digoxin toxicity from chronic therapy

e.g. consequence of declining renal function in a patient already taking digoxin

- Administer **half** the estimated dose required for full neutralisation initially.
- Monitor the patient for 6-12 hours.
- The remainder may be given if there is recurrence of toxicity.

Rationale: In chronic poisoning the dose of antibody required for full neutralisation depends on the total body load of cardiac glycoside, but as these patients are receiving digoxin therapeutically, total neutralisation is not required.

E: Dosage for ingestion of unknown amount

In absence of a serum digoxin concentration or estimated ingestion amount

- Consider giving 10 vials, which is usually adequate to treat most life threatening ingestions and observe the patient's response.
- If needed an additional 10 vials may be administered.
- Often small children can be adequately treated with smaller empiric doses and it is reasonable to start with 5 vials and escalate dose based on clinical response
- Monitor for volume overload in small (<20kg) children.