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Fructose-1,6-diphosphate (FDP) in yellow oleander poisoning

Submission date	Recruitment status	[ ] Prospectively registered
15/11/2006	No longer recruiting	[ ] Protocol
Registration date	**Overall study status**	[ ] Statistical analysis plan
06/02/2007	Completed	[ ] Results
Last Edited	**Condition category**	[ ] Individual participant data
26/01/2009	Injury, Occupational Diseases, Poisoning	[ ] Record updated in last year

Plain English summary of protocol
Not provided at time of registration

Contact information

Type(s)
Scientific

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Additional identifiers

Protocol serial number
071669; sactrc0305

Study information

Scientific Title
Phase II randomised controlled trial of fructose-1,6-diphosphate (FDP) in yellow oleander poisoning

Acronym
FDP Oleander Toxicity

Study objectives
Fructose-1,6-diphosphate (FDP) can reverse yellow oleander-induced cardiac toxicity in humans, specifically cardiac arrhythmia and hyperkalaemia.

Ethics approval required
Old ethics approval format

Ethics approval(s)
1. Australian National University Human Ethics Research Committee (Approval 2005/208) on 16th September 2005.
2. Sri Lankan Medical Association Ethical Review Committee (Approval ERC/O5-004) on 20th July 2005.

Study design
Placebo controlled, randomised phase II study

Primary study design
Interventional

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Yellow oleander-induced cardiac toxicity

Interventions
A blood sample will be taken on all randomised patients at the start and end of the infusion and 30 minutes, four and 12 hours later and then at daily intervals. Serum potassium, magnesium, calcium, as well as renal function and liver function will be measured (routine clinical biochemistry methodology). The cardiac glycoside and FDP concentration will also be measured at these times.

Four dose levels of FDP will be studied with the dose doubled if the results in the preceding eight patients do not indicate any concerning dose-related adverse effects. Two patients will receive a placebo and six patients will receive active treatment at each dose level.

Doses:
The first dose will be 30 mg/kg, 60% of the dose shown to be effective for this indication in dogs (50 mg/kg Intravenous [IV]). The dose will be doubled (60 mg/kg, 125 mg/kg) until 250 mg/kg assuming there is no significant toxicity attributed to the preparation at the previous dose. All these doses are well within the range of doses used in previous human studies. The highest dose is chosen as it was the most effective IV dose in one human study of ischemia/reperfusion injury post cardiac surgery (although FDP was also used in the cardioplegia solution), and larger doses (three doses of 250 mg/kg) seemed no more effective in this study and a non-significantly higher rate of acidosis and atrial fibrillation was also observed. Doses will be diluted in 5% dextrose and infused over 30 minutes with infusion pumps. Placebo infusions will be an equal volume of 5% dextrose. Drugs will be prepared shortly before use by a registered pharmacist. Treating doctors will be blind to treatment allocation.

Intervention Type
Drug

Phase
Phase II

Drug/device/biological/vaccine name(s)
Fructose-1,6-Diphosphate

Primary outcome(s)
The primary outcome will be the time to revert to continuous sinus rhythm with rate more than 44/min, in those receiving FDP versus the placebo group.

Key secondary outcome(s))
1. The number of patients with sinus rhythm with rate more than 44 bpm at two hours
2. Number of patients administered DigiFab
3. Other adverse events
4. Death

Secondary analysis will also compare the results at each dosing level as well as comparing trends with dose. Adverse events reported by doctors will be rated by them as to the likelihood of them being due to FDP infusion (certain, probable, possible, unlikely).

Completion date
01/06/2007

Eligibility

Key inclusion criteria
Patients (16 years of age and older, male or female) with significant cardiotoxicity will be recruited to this study, i.e. those with: 3° heart block, Mobitz type II 2° block, atrial tachyarrhythmias, sinus bradycardia with heart rate less than 35 bpm, or sinus arrest or block with sinus pauses more than 3 seconds.

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Sex
All

Key exclusion criteria
1. No consent
2. Pregnant

3. Less than 16 years of age
4. Ingested other cardioactive substances in addition to oleander
5. Other major medical conditions (e.g. cardiovascular disease renal or hepatic failure)

Date of first enrolment
01/06/2006

Date of final enrolment
01/06/2007

Locations

Countries of recruitment
Sri Lanka

Study participating centre
South Asian Clinical Toxicology Research Collaboration (SACTRC)
Peradeniya
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Sponsor information

Organisation
South Asian Clinical Toxicology Research Collaboration (SACTRC) (Sri Lanka)

ROR
https://ror.org/04z435g27

Funder(s)

Funder type
Charity

Funder Name
International collaborative research grant:

Funder Name
The Wellcome Trust (UK) (grant ref: 071669)

Funder Name
The National Health and Medical Research Council (NHMRC) of Australia (Australia)

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Study website	Study website	11/11/2025	11/11/2025	No	Yes