

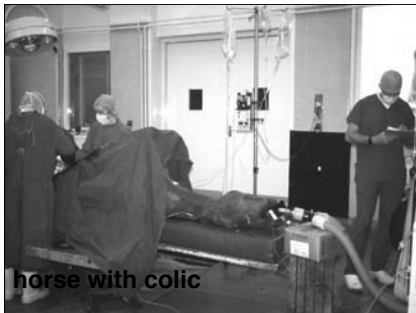
Sympathomimetic Inotropes

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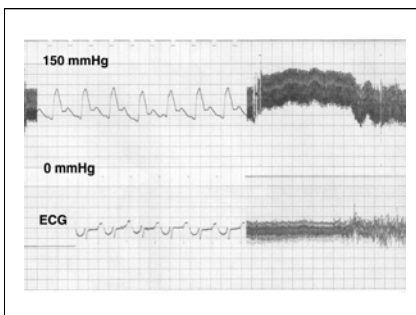
sympathomimetic inotropes

- used for acute heart failure

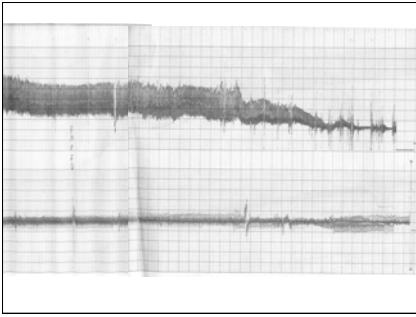
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problems

- **endotoxaemia**
 - reduced cardiac output
 - vasodilatation
- **shock**
- **hypoxia**
- **halothane side effects**

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acute heart failure

- **objective**
 - get oxygenated blood to myocardium and brain

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drugs?

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drugs

- oxygen
- positive inotropes
- fluids
- antiarrhythmics
- vasodilators

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positive inotropes

- sympathomimetics
- cardiac glycosides
- phosphodiesterase inhibitors

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sympathomimetics

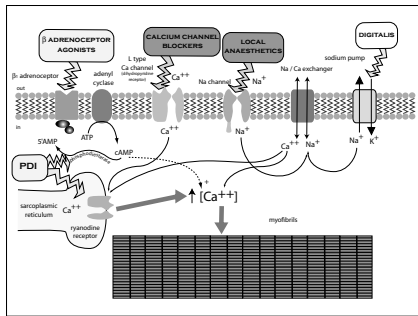
<i>receptor</i>	α_1	α_2	β_1	β_2
adrenaline	+++	+++	++	++
noradrenaline	+++	+++	+	0
dopamine	0	0	++	0
isoprenaline	0	0	+++	+++
dobutamine	0	0	+++	0
dopexamine	0	0	+++	0

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sympathomimetics

<i>effect on</i>	<i>rate</i>	<i>force</i>	<i>SVR</i>	<i>ABP</i>
adrenaline	++	+++	+++	+++
noradrenaline	-	0/+	+++	+++
dopamine	0	+++	0/-	++
isoprenaline	+++	+++	-	-
dobutamine	+	+++	+	+++
dopexamine	0/+	+++	0	+++

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indications

- acute heart failure
- congestive heart failure
- haemostasis
- anaphylaxis

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side effects

- tachycardia
- hypertension
- arrhythmias
 - ventricular tachyarrhythmias
- tolerance

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pharmacokinetics

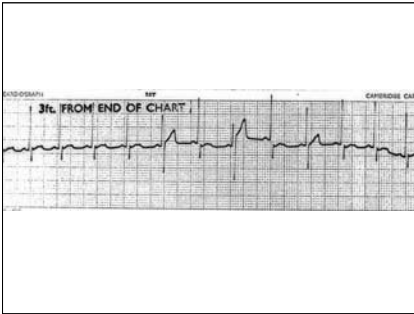
- half life of minutes
- must be given iv
- usually given as an infusion

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monitoring effects

- is it necessary?
- ECG
- direct blood pressure

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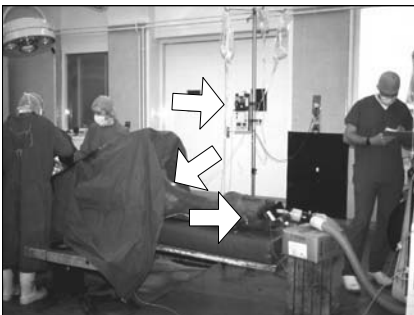


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choice of drug

- adrenaline
- dopamine
- dobutamine
- dopexamine
- isoprenaline

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anaphylaxis

- massive histamine release
- vasodilatation
- tremors / oedema / collapse
- often caused by drugs

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anaphylaxis

- adrenaline sc (im)
- monitor effects
- only give iv as a last resort

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adrenaline dose

- dilute to 1:10,000
- 20 μ g/kg sc or
- 5 - 20 μ g/kg iv or
- 20 - 40 μ g/kg intratracheally or
- as a last resort only
- 2 μ g/kg intracardiac

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adrenaline

- light sensitive
- heat sensitive
- check expiry date!

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haemostasis

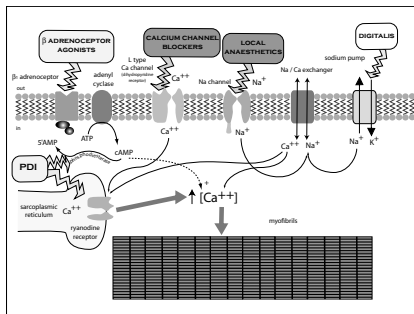
- mucous membranes
- large oozing surfaces
- adrenaline on a swab
 - interactions with halothane!

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positive inotropes

- sympathomimetics
- cardiac glycosides
- phosphodiesterase inhibitors

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calcium

- calcium chloride
- calcium (boro) gluconate

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calcium

- some inotropic effect
- potent vasoconstrictor
- reduces blood flow to myocardium and brain
- do not use as an inotrope!

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sympathomimetic inotropes

- used for acute heart failure in anaesthesia / intensive care
- give as iv infusion to effect
- monitor ECG for tachyarrhythmias
- in anaphylaxis use adrenaline sc

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