

Abbott "GEMSTAR" Pump

The Abbott "GEMSTAR" pump was recently introduced as a multipurpose pump for use in the provision of post-operative analgesia.

It consists of a pump which has various programmable modes to provide either

- continuous narcotic intravenous infusions
- epidural analgesic infusions
- PCA infusions [intravenous]

The pump was supplied with a choice of two giving sets:

- 1) A giving set with an anti-siphon valve built in as an integral part of the set.
- 2) A giving set with a detachable anti-siphon valve screwed on to the distal end, between the giving set and the IV cannula.

When the cartridge on the giving set is inserted in the pump then two "clicks" are felt if it is correctly inserted. If the cartridge is not fully inserted, only one click is felt. If one attempts to use the pump and the cartridge has not been correctly inserted:

- "cont. IV infusion mode": the pump alarms and indicates that the cassette is not correctly inserted.
- "epidural mode": the pump alarms and indicates that the cassette is not correctly inserted.
- "PCA mode": the pump does not alarm until the patient pushes the button for the first time.

Because the cartridge has not been correctly inserted in the pump, then there is the possibility of the infusion draining in to the patient under gravity. The patient should be protected by the anti-siphon valve. But, if the giving set in use has the detachable anti-siphon valve and this is not attached, then the narcotic solution can slowly flow in to the patient. The alarm indicating that the cassette is not correctly inserted is only activated when the patient pushes the button for the first time. As the analgesic solution is continuously draining in to the patient, he experiences no pain, does not push the button and is slowly but steadily overdosed with narcotic. This has occurred more than once.

Abbott indicates they are no longer supplying giving sets with a detachable anti-siphon valve.

For free flow to occur a number of steps must have been done incorrectly. To minimise the possibility of free flow it is important to ensure that there is no solution flow prior to connection of the Gemstar set to the patient. As a final safety check the operator should check that the slide clamp on the distal line is in the open position and that there is no solution flow before connecting the set to the patient connection.

Dr Alex Babarczy – Anaesthetist

and

Dr Patricia Mackay

Chairman

Consultative Council on Anaesthetic Mortality and Morbidity