

# Safety, tolerability and patient preference of intravenous colistimethate sodium delivered by bolus compared to infusion in adults with cystic fibrosis

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## BACKGROUND

- The West Midlands Adult Cystic Fibrosis (CF) Centre currently cares for 380 patients and continues to expand.
- Historically we have administered intravenous (IV) colistimethate sodium (CS) as an infusion.
- Since 2002, CS has been licensed to be administered as a bolus injection via a Totally Implantable Venous Access Device (TIVAD).
- We now use bolus CS routinely at our CF centre, however there is very little evidence to support the use of this relatively new method of delivery.

## AIMS

- To determine the characteristics of patients that have received CS by both IV infusion and bolus at our centre.
- To compare the experience of using infusion and bolus CS from a patient and nursing perspective.
- To assess the tolerability and side effects of bolus CS.

## METHODS AND MATERIALS

- We conducted a retrospective cohort study of patients that have received IV CS by both infusion and bolus injection in our large regional adult CF centre.
- We recorded baseline clinical parameters (at the time of switching to bolus injection).
- We asked subjects and nursing staff to rate the following with regards to the drawing up and delivering of bolus injection IV CS:
  - Ease of drawing up
  - Ease of administration
  - Convenience
  - Time required
  - Side effects
  - Patient preference

## RESULTS

- 26 subjects (14 male) were identified from Jan 2012 - Dec 2013, with median (IQR) age 29 (25-35) yrs and FEV<sub>1</sub> 53 (39-68)% predicted.
- 25 (96%) subjects were chronically infected with *P. aeruginosa* and 21 (81%) subjects had CF-related diabetes.
- These 26 subjects had received 84 courses of either bolus IV CS or via infusion.
- Patients reported that, compared to infusion, bolus CS was:
  - easier to reconstitute and administer (18 (69%) subjects)
  - more convenient (26 (100%) subjects)
  - less time consuming (25 (96%) subjects).
- Comments from patients regarding receiving bolus CS included:
  - "Does not take as long"
  - "The giving set was taking a long time to deliver the drug through my port, so this was better by a bolus"
  - "Saves time and mobility as not connected to an infusion"
  - "Easier to use, more convenient in a already busy 2 weeks, less hassle = less stressful"
  - "Less complicated"
  - "No drip and one less thing to think about"
- All ten of the members of the nursing team agreed that bolus CS was easier, more convenient and took less time to reconstitute and administer. They also commented that it saved time as they did not have to monitor and return to the patient to disconnect the infusion.
- 4 subjects reported side effects with bolus injection, including self limiting dizziness and sensory disturbance.

## CONCLUSIONS

- We suggest that bolus IV CS via a TIVAD should be used more widely, since it is more convenient than infusion, generally well tolerated and safe.
- This method of delivery is also potentially more cost effective, since less time is required for preparation and delivery, as well as there being no need for IV fluids for dilution and ancillaries.