Amoxicillin can be administered by continuous infusion using elastomeric pumps | 1

Adequate plasma drug concentrations and favourable clinical outcomes suggest that amoxicillin can be administered by continuous infusion using elastomeric pumps” Arensdorff et al (2017).

Abstract

BACKGROUND: Elastomeric pumps can be useful for the administration of antibiotics in the outpatient setting.

OBJECTIVES: To determine amoxicillin degradation in elastomeric pumps, as well as the effectiveness of amoxicillin treatment administered by elastomeric pumps.

METHODS: Antibiotic degradation was measured in elastomeric pumps filled with 6 g of amoxicillin in 240 mL of NaCl 0.9% by drawing samples at 12 h intervals when stored in the fridge for 48 h and when worn around the waist for 24 h. Subsequently nine patients were treated with continuous infusions of 8 or 12 g of amoxicillin per day. Plasma amoxicillin concentrations were measured on each visit to the outpatient parenteral antibiotic therapy unit. Clinical outcome was verified 3 months after the end of treatment.

RESULTS: Amoxicillin degradation in elastomeric pumps reached 10% after 48 h in the fridge and an additional 30% when worn around the waist for 24 h. Mean plasma drug concentrations achieved with 12 g of amoxicillin per day were 18.5 mg/L (95% CI 13.5-23.5), which is largely above the MIC of amoxicillin-susceptible bacteria. Nine patients treated for various complicated infections were cured and had no unexpected adverse effects.

CONCLUSIONS: Adequate plasma drug concentrations and favourable clinical outcomes suggest that amoxicillin can be administered by continuous infusion using elastomeric pumps. This treatment modality does not fulfil formal requirements regarding pharmaceutical stability, but the resulting safety impact in patients is probably limited. Therapeutic drug
Amoxicillin can be administered by continuous infusion using elastomeric pumps. Monitoring and a close clinical follow-up are recommended if this route of administration is chosen.

Reference:

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