To prevent the potentially serious effects of flow-rate variability on patients, clinicians should receive instruction on the fluid dynamics of an IV administration set and so be able to take steps to minimise flow-rate changes during IV therapy” Maiguy-Foinard et al (2016).

Abstract:

OBJECTIVE: The aims are to identify critical parameters influencing the drug mass flow rate of infusion delivery to patients during multidrug infusion and to discuss their clinical relevance.

DATA SOURCES: A review of literature was conducted in January 2016 using Medline, Google Scholar, ScienceDirect, Web of Science and Scopus online databases.

Data Extraction: References relating to the accuracy of fluid delivery via gravity-flow intravenous (IV) infusion systems and positive displacement pumps, components of IV administration sets, causes of flow-rate variability, potential complications due to flow-rate variability, IV therapies especially at low flow rates and drug compatibilities were considered relevant.

DATA SYNTHESIS: Several parameters impact the delivery of drugs and fluids by IV infusion. Among them are the components of infusion systems that particularly influence the flow rate of medications and fluids being delivered. By their conception, they may generate significant start-up delays and flow-rate variability. Performing multidrug infusion requires taking into account two main points: the common dead volume of drugs delivered simultaneously with potential consequences on the accuracy and amount of drug delivery and the prevention of drug incompatibilities and their clinical effects.

CONCLUSION: To prevent the potentially serious effects of flow-rate variability on patients, clinicians should receive instruction on the fluid dynamics of an IV administration set and so be able to take steps to minimise flow-rate changes during IV therapy.

Reference:

Thank you to our partners for supporting IVTEAM

- Closed-loop documentation system for IV infusion administration
• Colistin methanesulfonate infusion solutions for home administration
• Infusion-related events during natalizumab administration