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Introduction

- Use of IV phosphate is recommended for correction of severe or symptomatic hypophosphatemia
- Local and Statewide guidelines recommend infusions of 2 to 6 hours when phosphate is administered peripherally
- Longer infusions lead to inconvenient IV line occupation while shorter infusions may be linked with infusion reactions, hypocalcaemia and reduced retention of infused phosphate

Aim

To determine if faster infusions of IV phosphate lead to smaller increases in serum phosphate, greater reductions in serum calcium or higher rates of documented infusions reactions

Methods

- A retrospective cohort study was conducted from July 2019 to April 2023.
- Patients were identified through pathology & prescribing data and included if they had;
 - Phosphate level <0.4mmol/L
 - Received IV Sodium Dihydrogen Phosphate 15.6% via a peripheral line
 - Had a phosphate level taken within 24 hours of completion of the infusion
- Infusions of 10mmol given over 3hrs or less were considered **fast**.
- Changes in phosphate & calcium levels, use of oral phosphate supplementation, and documentation of infusion reactions were audited

Results

- A total of 297 infusions were audited. 124 of the 297 infusions were administered as **fast** infusions.
- The median **phosphate** level pre-infusion was 0.3mmol/L
- The median change in **serum phosphate** per 10mmol administered for **fast** infusions was 0.22 mmol/L
- The median change in **serum phosphate** per 10mmol administered for **slow** infusions was 0.25 mmol/L
- The median change in **serum calcium** per 10mmol of phosphate administered was no different between the fast and slow groups (-0.02mmol/L in both groups)
- No documented infusion-related reactions were noted in either cohort.

Figure 1: Change in PO₄ and Ca²⁺ levels per 10mmol of phosphate administered

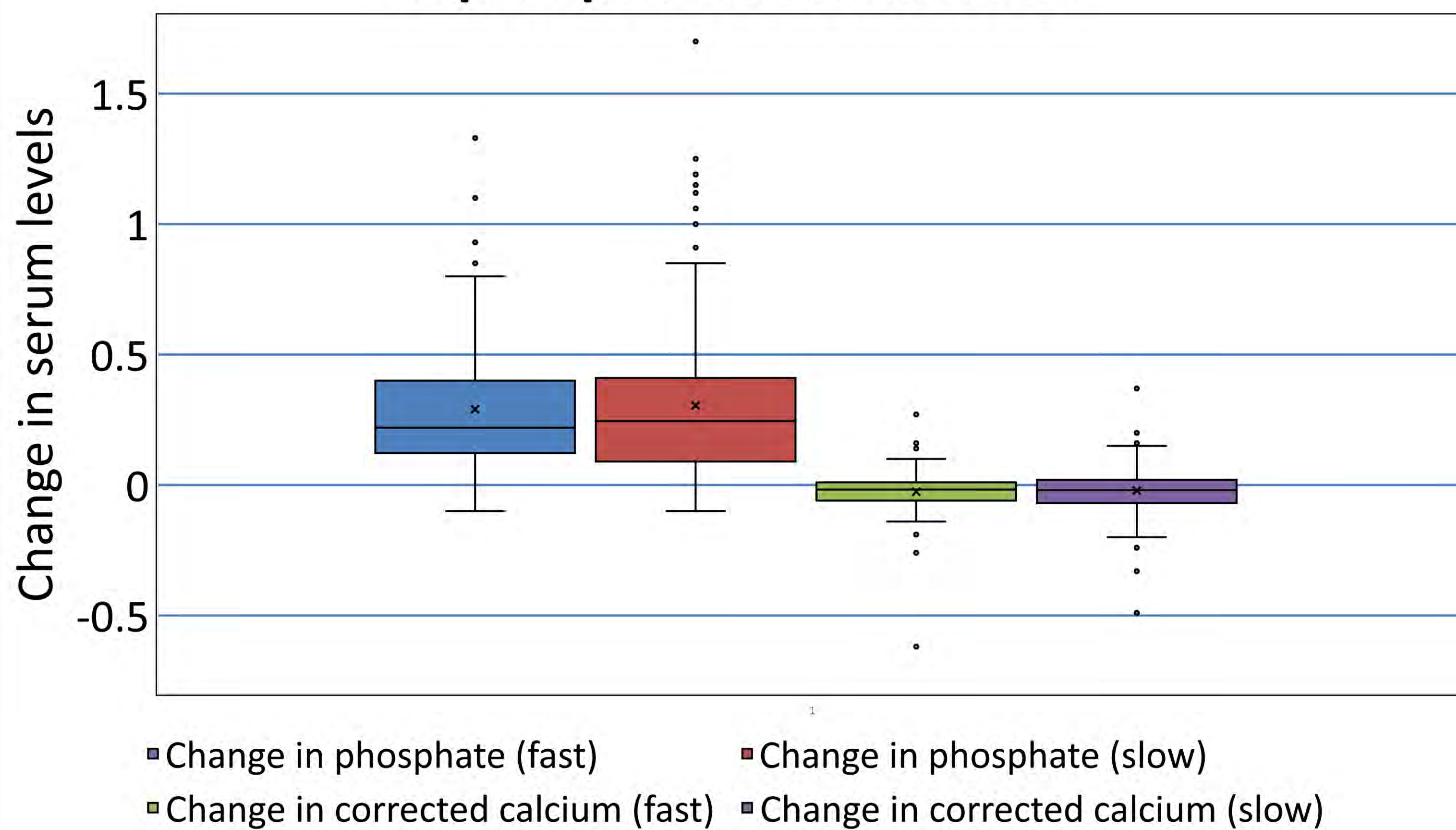
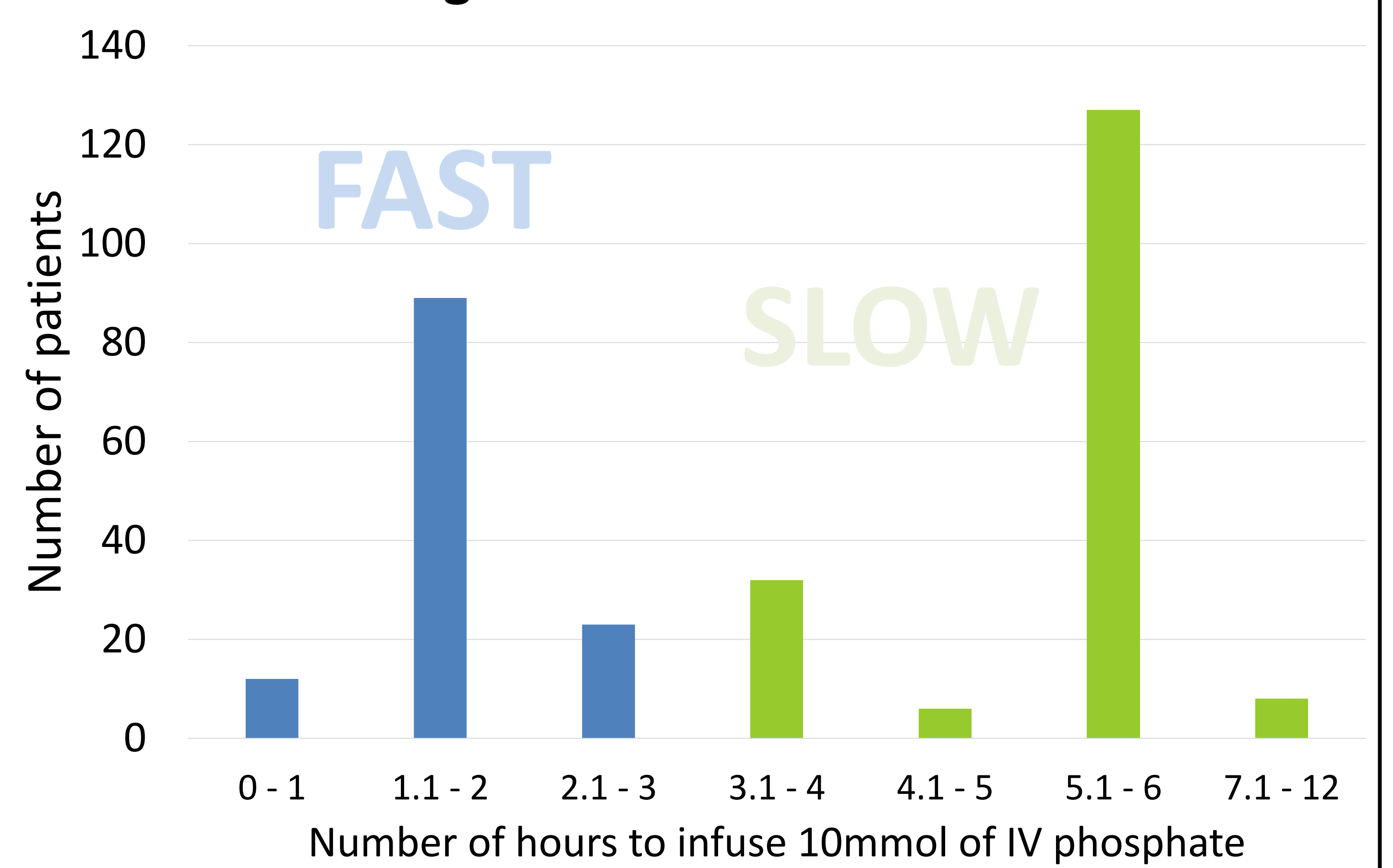


Figure 2: Infusion times



Conclusions

- Administration of IV phosphate over ≤ 3 hours is safe and effective
- Faster infusions free up IV lines, allow earlier removal of cannulas and reduce nursing time.