



# Decision-support tools to manage drug incompatibilities: evaluation by nurses

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## INTRODUCTION

Preventing drug incompatibilities has a high impact on the safety of drug therapy. Although there are no international guidelines to manage drug incompatibilities, different decision-support tools such as handbooks, cross-tables and databases are available. In a previous study, two decision-support tools have been pre-selected by pharmacists as fitting nurses' needs on the wards<sup>1</sup>. The objective of this study was to have these both tools evaluated by nurses to determine which would be the most suitable for their daily practice.

## MATERIALS & METHODS

Assessment of two tools (*fig.2*) by 48 nurses in 5 units (PICU, adult and geriatric intensive care, surgery, onco-hematology) using a standardized form<sup>1</sup>.

- Scientific accuracy } Evaluation by determining the compatibility of five drugs pairs (*fig.2*): rate of correct answers according to the Trissel's Handbook on Injectable Drugs 15<sup>th</sup> ed, chi-square test.
- Ergonomics } Evaluation using visual analogue scales (VAS 0-10; 0 = null, 10 = excellent). Results are expressed as the median and interquartile range (IQR) for 25% and 75% (Wilcoxon rank sum test).
- Applicability
- Design
- Reliability

## CONCLUSION

Both tools showed the same accuracy to assess drug compatibility. In terms of ergonomics and applicability the cross-table was better than the colour-table, and was preferred by the nurses for their daily practice. The cross-table will be implemented in our hospital as decision-support tool to help nurses to manage drug incompatibilities.

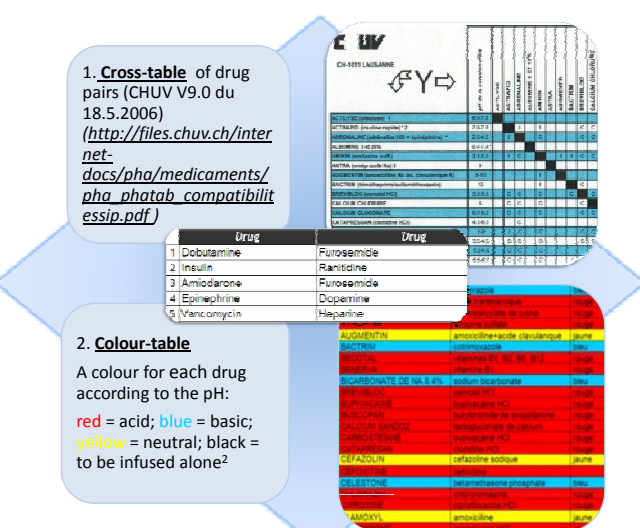


Fig.2: Drugs pairs and tools assessed

## RESULTS

- The **rate of correct answers** was above 90% for both tools (cross-table 96.2% vs colour-table 92.5%,  $p > 0.05$ ).
- The **ergonomics** (*fig.3*) and the **applicability** (*fig.4*) were higher for the cross-table [7.1 (IQR<sub>25</sub> 4.0, IQR<sub>75</sub> 8.0) vs 5.0 (2.7 - 7.0), resp. 8.3 (7.4 - 9.2) vs 7.6 (5.9 - 8.8)].
- The **design** (*fig.5*) of the colour-table was judged significantly better [4.6 (2.9 - 7.1) vs 7.1 (5.4 - 8.4)].
- No significant difference was observed in terms of **reliability** (*fig.6*) [7.3 (6.5 - 8.4) vs 6.7 (5.0 - 8.6)].
- The cross-table was globally preferred by 65% of the nurses (*fig.7*) and 68% would like to have this decision-support tool available for their daily practice.

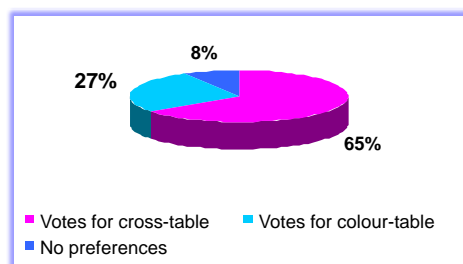


Fig.7: Nurses' global preferences

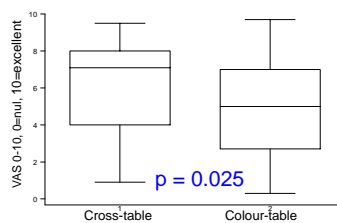


Fig.3 : Ergonomics

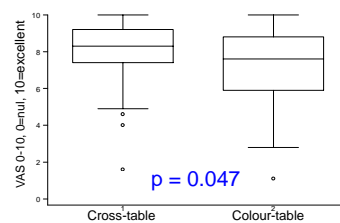


Fig.4: Applicability

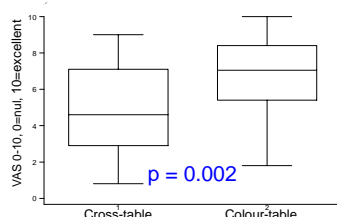


Fig.5: Design

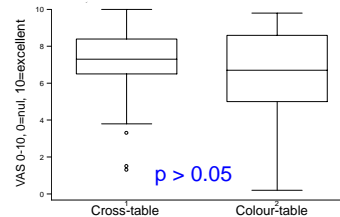


Fig.6: Reliability

References : <sup>1</sup>De Giorgi I et al. Evaluation of tools to prevent drug incompatibilities in paediatric and neonatal intensive care units. Pharmacy World & Science 2010; 32(4): 520  
<sup>2</sup>Vogel Kahmann I et al. Inkompatibilitätsreaktionen auf der Intensivstation. Anaesthesist 2003; 52: 409-412