Patients in the ICU often get many intravenous (iv) drugs at the same time. Even with three-lumen central venous catheters, the administration of more than one drug in the same iv line (IVL) is frequently necessary (fig. 1).

The objective of this study was to observe how nurses managed to administer these many medications and to evaluate the proportion of two-drugs associations (TDA) that are compatible or not, based on known compatibility data.

For practical reasons, drugs were analysed only by pairs, which constitutes the main limit of this work. The average number of drugs in the IVL system was 3.1 ± 0.8 (range: 2-9). 83.2% of the drugs were given by continuous infusion, 14.3% by intermittent infusion and 2.5% in bolus (fig. 4).

The associations observed allowed to form 8421 pairs of drugs (71.7% drug-drug and 28.3% drug-solute).

According to literature data, 80.2% of the association were considered as compatible and 4.4% incompatible. 15.4% were not interpretable because of different conditions between local practices and those described in the literature (drug concentration, solute, ...) or because of a lack of data.

After laboratory tests performed on the most used drugs (furosemide, KH₄PO₄, morphine HCl, insulin, KCI, heparin, propofol, midazolam, remifentanil, sufentanil, MgSO₄, amiodarone, norepinephrine, dopamine, dobutamine, sodium nitroprusside, sodium thiosulfate), the proportion of compatible TDA raised to 85.7%, the incompatible stayed at 4.6% and only 9.7% remain unknown or not interpretable (fig. 5).

Nurses managed the administration of iv medications quite well, as only less than 5% of observed TDA were considered as incompatible. But the 10% of TDA with unavailable compatibility data should have been avoided too, since the consequences of their concomitant administration cannot be predictable.

For practical reasons, drugs were analysed only by pairs, which constitutes the main limit of this work. The average number of drugs in the same association being three, laboratory tests are currently performed to evaluate some of the most observed three-drugs associations.