Continuous Venovenous Haemofiltration in Critically Ill Patients: Practice Assessment and Cost Impact

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BACKGROUND

For patients with acute kidney injury (AKI) in Intensive Care Unit (ICU) → Continuous venovenous hemofiltration (CVVH) with citrate have been implemented since 2013.

➔ **Changing practices and restitution fluids (RF)**

➔ **Reflexion between physicians, nurses and pharmacists**

➔ **Cost impact**

PURPOSE

Assess cost impact of citrate CVVH versus no citrate CVVH

Estimate cost impact of different RF use.

METHOD

- Retrospective study about all ICU patients requiring CVVH in 2014.
- Data collected: patient characteristics, CVVH data.

	CITRATE		NON CITRATE	
PPS RF	Prismocitrate®			
Reinjected RF	Prismocal®	Phoxilium®	Prismocal®	Hémosol®

Statistical analysis:

Results about costs: for 24h of effective CVVH.

Differences citrate and no citrate group : student test with p<0,05.

Cost impact simulation of different RF: appariate student test with p<0,05.

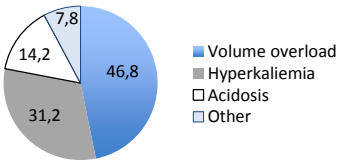
RESULTS

Patients Characteristics

In 2014, 64 patients received CVVH in ICU

	All (n = 64)	Citrate (n = 26)	No citrate (n = 38)
Age	68.1 ± 16.6	72.7 ± 11.7	64.9 ± 17.4
Ratio M/F	0.7 (42/22)	0.7 (18/8)	0.7 (25/13)
BMI	27.9 ± 6.6	28.6 ± 6.6	27.7 ± 5.2
SAPS II	58.2 ± 20.5	54.8 ± 18.7	61.8 ± 20.5
Mean stay in ICU	9.0 ± 9.6	11.3 ± 9.7	8.5 ± 9.6
Mortality rate (%)	28.1	23.1	31.6

CVVH indication (%)

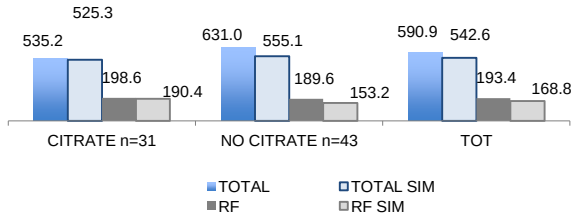


- Duration was < 24h for 39.2% (n=29) of CVVH, 65.6% of them because of normal conditions recovery.
- Citrate anticoagulation was used for 40.0% of them.

CVVH characteristics and cost impact simulations

	All (n=74) Mean (SD)	Citrate (n=31)	No citrate (n=43)	p
CVVH dose ml/kg/h	36.4 (8.3)	36.2 (9.2)	36.5 (7.6)	0.89
Mean effective duration (h)	52.1 (60.7)	53.8 (60.8)	50.8 (61.3)	0.16

Mean cost (euros)



➔ **Cost citrate vs no citrate CVVH: no statistical difference**

➔ **RF: annual total economy of 5726.3€**

CONCLUSION

- Interesting assessment of CVVH practices
- No statistically difference between citrate and no citrate group about the mean cost/24h
- Most CVVH were shorter than 24h

➔ reflexion about the **intermittent hemodiafiltration** could be needed

- With this methodology, **not taking into account human costs,** only evaluation of cost impact of fluids and materials consumptions in ICU:

➔ **help to identify where some interesting economies could be made**