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MEDICAL COST COMPARISON OF TWO CHEMICAL DISINFECTION PRODUCTS IN STERILIZATION

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Objective: In application of instruction 449[a], at our sterilization unit, a total prion decontamination had been undertaken during the cleaning step of medical devices. The aim of this study was to compare the medical cost of two prion decontamination agents (DA): **Prolystica 100 Steris** (P) *versus* **Actanios LDI Anios** (A) currently used, in order to optimize the cleaning stage (cleaning quality, cycle duration, costs).

Methods: This study was performed on **31 decontamination cycles** on 2 identical cleaners (Steelco 610/2 2S). The cleaning cycle programs are described in table 1. The drying step duration was voluntarily increased by 3 minutes (min) with P. The average number of baskets/cycle is 6,3 with P and 4,7 with A.
14 soil-tests Pure check A (Ansell) and 24 surface protein tests Clean-Trace (3M) are performed on each DA.
15 tests (62,5%) Clean-Trace are done on locations less accessible to cleaning for P and 12 (50%) for A.
A visual control is performed at the end of the cleaning stage.

Results-Discussion:

- **Cleaning quality**

For A, 1 test (7%) presents traces of organic soils.
For P, 100% of Pure Check tests are negatives.
For both DA, 100% of Clean-Trace tests have turned to green (medical devices surfaces considered cleaned).

Similar results regarding the cleaning quality

- **Cycles time**

During the tests, average cleaning time is 44,4min for A and 41,4min for P, showing a significant reduction of 3min ($p<0.05$), with at the same time a 3 minute-increase of drying duration with P.
The use of P reduces the cleaning time (-4min) and replaces the neutralization step by a simple water wash (-2min) and therefore permits to eliminate the use of an acid agent.
This **potential gain of 6min** could allow us to do one more cycle/day/cleaner (increase of medical devices care rate within 24h) and/or to improve the drying step, currently judged not enough satisfactory.

3min/cycle gain + 3min of drying with P

Steps	Decontamination agent "A"		Decontamination agent "P"
Cleaning	**Actanios LDI** 1% (DA) 55°C 10 min **14 min**	**- 4 min** →	**Prolystica 100** 0,8% (DA) 55°C 7,5min **10 min**
Cleaning	**RN Anios** (acid agent) 45°C **3 min**	**- 2 min** →	Water 0°C **1 min**
Thermal disinfection	**RHW Anios** (drying accelerator) 90°C 6 min		**Dry N Shine** (drying accelerator) 90°C 6 min
Drying	90°C **13 min**	**+ 3 min *** →	90°C **16 min**

■ real times

* : voluntarily increase of drying time with P

Table 1: Cleaning cycle programs

- **Cost**

The replacement by P could induce an economy of **908 €/year** in chemical products (- 35% of the actual budget) and a decrease of 44% in the volume of chemical products/year (table 2).

35% of budget economy with P

	Volume/ cycle (mL)	Cost/L (euros)	Cost/cycle (euros)	Nb cycles/ year	Use/year (L)	Annual budget (euros)
Decontamination agent "A": Anios LDI 1%						
DA	150	5,70	0,86	2000	300	1710
Acid agent	45	5	0,23	2000	90	450
Drying acc	45	5	0,23	2000	90	450
Total			**1,32**		**480**	**2610**
Decontamination agent "P": Prolystica 100 0,8%						
DA	120	6,32	0,76	2000	240	1517
Drying acc.	15	6,16	0,09	2000	30	185
Total			**0,85**		**270**	**1702**

- 0,47euros **- 210L (-44%)** **- 908 euros (-35%)**

Table 2: Economical comparison of the 2 DA

Conclusion:

This study confirms the replacement of the actual Actanios LDI by Prolystica 100 regarding the economic impact and time saving with the same prion decontamination and cleaning quality.

Reference : [a] Instruction DGS/RI3/2011/449 December 1st 2011

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Conflict of interest: Nothing to disclose