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## Background

In France, an endoscope must be used into a delay of 12 hours (h) after disinfection. Storage cabinets for heatsensitive endoscopes allow increasing this delay to 72h. After these delays, disinfection should be redone before endoscope utilization.

SureStore® (Medical Innovation Group) is an alternative solution for endoscopes storage that used injection of hydrogen peroxide solution and air evacuation, with a delay of storage of several weeks.

**Objectives** : evaluate the level of microbiological contamination of endoscopes stored with SureStore® up to 14 days (d) after disinfection and to evaluate risk factors for contamination.

## Material/methods

Prospective study from July 15, to October 15, 2015 in a French teaching hospital.

GI (Gastrointestinal) endoscopes were:

- First, treated using an automated endoscope reprocessor (AER)
- Then, stored into SureStore®
- Last, stored in standard non-ventilated cupboards.

38 GI endoscopes were included:

17 gastroscopes (G), 13 colonoscopes (C), 5 duodenoscopes (D) and 3 echoendoscopes (EE).

- Conformity level was defined by less than 25 colony-forming units and absence of *Enterobacteriaceae*, *Pseudomonas sp.*, *Stenotrophomonas maltophilia*, *Staphylococcus aureus*, *Acinetobacter sp.* and *Candida sp.*
- Sterility level was defined by absence of bacteria and yeasts.

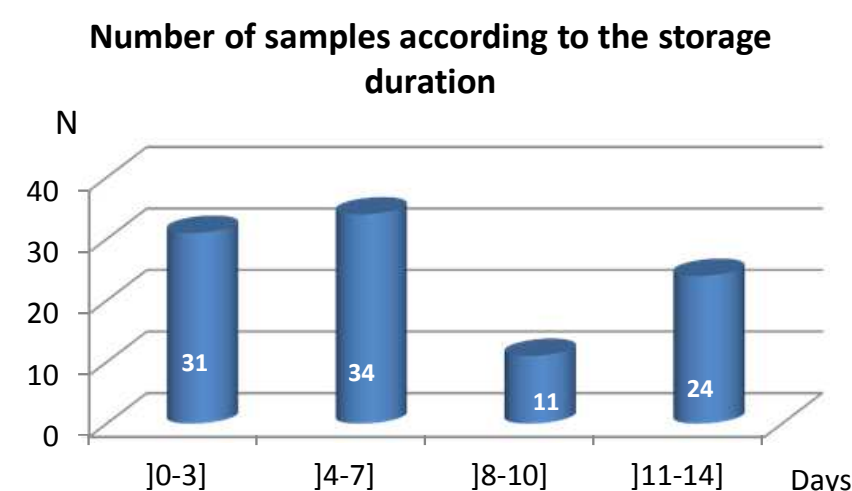
Levels were analysed according to **type of endoscope** (G, C, D, EE), **sampling context** (standard, after repairs/on new device, after accidental repressurisation), **delay between exit of AER and treatment into SureStore®** (<1h, 1-2h, >2h), and **duration of storage** (≤3d, 4-7d, 8-10d, 11-14d).

## Conclusions

Our preliminary results show that SureStore® allows GI endoscopes to maintain a **conformity level of 98%** up to 14d after disinfection. Sterility level wasn't associated with storage duration. The delay between exit of AER and storage with SureStore® should be less than 1h because sterility levels decrease after 1h. This device could reduce number of endoscope disinfection, thus nursing workload and endoscopes' wear. Further research is needed to validate SureStore® for other type of endoscopes.

## Results

A total of 100 samples were collected:

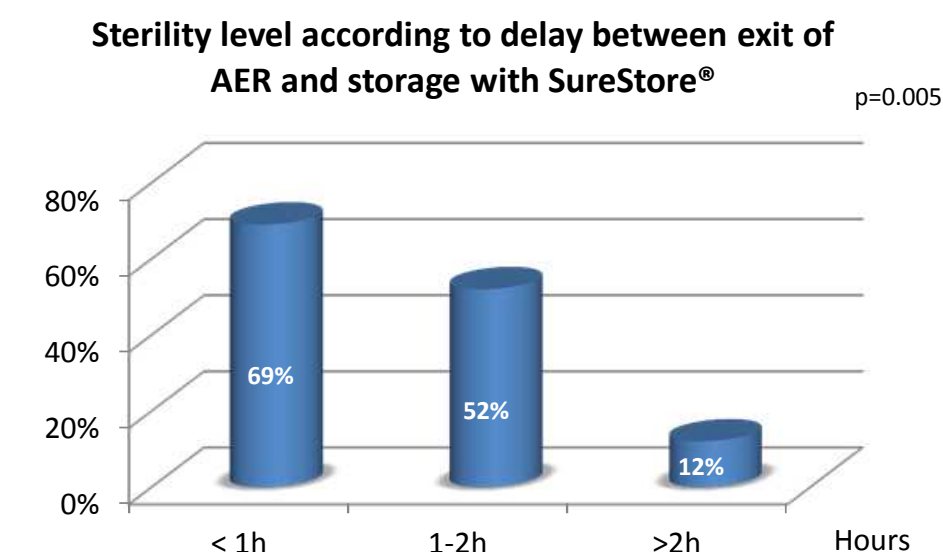
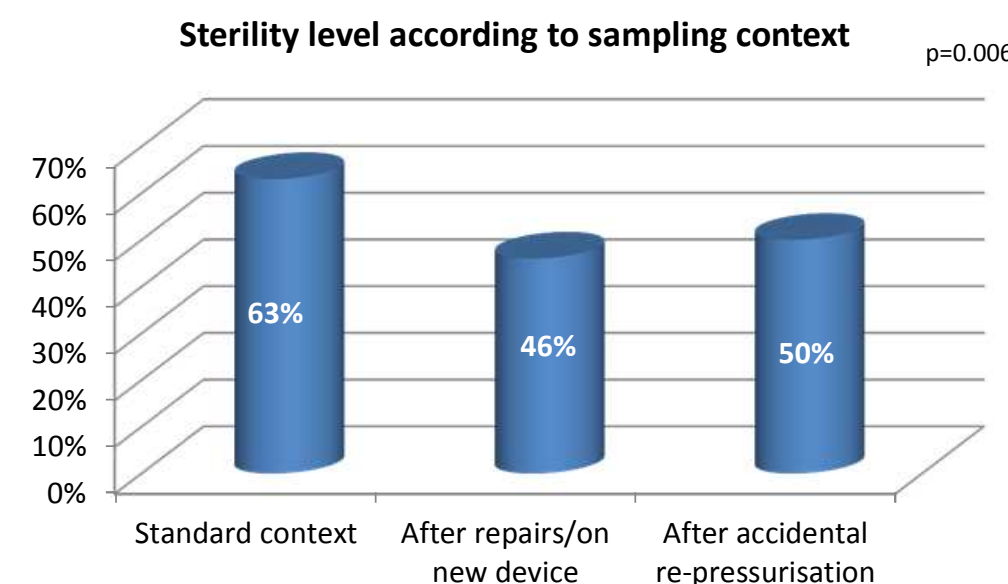


Conformity level was **98%**.

Risk factors of contamination can not be evaluated.

Sterility level was **60%** and wasn't associated with duration of storage (≤3d: 48%, 4-7d: 65%, 8-10d: 45% and 11-14d: 75%; p=0.15) and type of endoscope (G: 72%, C: 45%, D: 72%, EE: 50%; p=0.06).

Sterility level was significantly associated with **sampling context** (p=0.006) and **delay between exit of AER and storage with SureStore®** (p=0.005).



The multivariate analysis confirms the only link between sterility level and the delay exit of AER - storage with SureStore®