To the Editor:

We investigated a hospital laundry system that uses ozone gas as a disinfection agent. Ozone is a powerful oxidizing agent that has been used as a chemical disinfectant for water treatment in Europe since 1893. The use of ozone has increased in medicine lately due to the number of microorganisms resistant to chlorine.

The process used for washing highly contaminated hospital linen can be summarized as follows: (1) execution of one washing cycle with conventional chemical products (humidification and pre-wash), (2) one washing cycle with ozone (4 mg/L) for 15 minutes, and (3) a softening cycle. Water samples were collected using sterile 20-mL syringes. Pre-wash samples were taken after 2 minutes of agitation without any additives. Post-wash samples were collected similarly, following the final cycle with ozonized water. The samples were evaluated for the most probable number of total coliforms and Escherichia coli using the chromatogenic defined substrate test method (Colilert; Idexx Laboratories, Westbrook, ME).

The most probable numbers (+ or -) SD per 100 mL of E coli and of total coliforms were 1.3 (+ or -) 0.3 x 104 and 3.74 (+ or -) 1.8 x105 pre-wash, and were reduced to 0.1 (+ or -) 0.1 and 1.24 (+ or -) 1.13, respectively, post-wash (each P < .0001). Thus, despite intense contamination of the rinsing water, ozone at 4 mg/L proved able to control the tested microorganisms.

Some studies have shown that many species, ie, E coli, Streptococcus, and Bacillus, can be inactivated by 30 seconds of exposure to an aqueous solution of ozone (0.2 mg/L).

In the current study, we demonstrated that ozone used in a laundry processing system reduced by five logs the total number of coliforms and E coli present in hospital laundry rinsing water. However, comparative studies testing different conventional disinfectant agents are still necessary to establish the efficacy of ozone as a laundry disinfectant agent.

REFERENCES

Claudia Catelani Car Cardoso, DVM
João E. Fiorini, PhD
Luciano R. Fer Ferreira, PhD., Universidade de Alfenas, Alfenas, MG, Brazil
Luiz A. Amaral, PhD., UNESP, Jaboticabal, SP, Brazil

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