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Leech management before application to patient for preventing healthcare-associated infections: results of a nationwide survey

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Background: Leech therapy is widely used in plastic/reconstructive microsurgery to aid salvage of failing flaps, replanted digits, ears or lips. It significantly improves a successful outcome but the drawback is a risk of infectious complication that results in a drop of the salvage rates from 70-80% to below 30%. Infection (frequency: 4.1-36.2%) is nearly systematically caused by aeromonads that are obligate symbiont of leeches' digestive tract. Infection is usually severe so that antibiotic prophylaxis (ATBP) is recommended during all the time of leech application, indeed until cicatrization. Otherwise, the legal status of leech for medical use varies among countries, leading to unclear practices of leech maintenance before use.

To assess the current extent of use of medical leeches and to investigate practices of prevention of the healthcare-associated infections, we report the findings of a nationwide survey conducted in all the French university hospitals.

Material/methods: A questionnaire was emailed in August 2015 to the pharmacy department of all the institutions belonging to the "CHU network" that includes all the 32 French university hospitals and related centers. Data concerning conditions of storage, leech external decontamination, microbiological control, mode of delivery and ATBP were collected.

Results: 28 of the 32 centers contacted filled the questionnaire, among which 23 practiced leech therapy, mostly with a centralized storage in the pharmacy department.

Nine centers (39.1%, 9/23) declared to perform leech external decontamination with chlorhexidine (7 centers) or gentamycin (2 centers) either at time of leech delivery (6 centers), of leech application (1 center) or systematically during all the storage period for 2 centers (one decontamination every week and every 2 weeks, respectively).

Only 2 pharmacy departments declared to perform recurrent microbiological controls of the water storage. Leech delivery was mainly nominally performed and traceability of the batch number was achieved in only 39.1% of the cases (9/23).

Only 5 centers (21.7%) declared that a protocol of ATBP was systematically administered during leech therapy: sulfamethoxazole/trimethoprim (2 centers), quinolone (2 centers) or amoxicillin/clavulanic acid (1 center). In 4 cases, ATBP was maintained during the complete duration of leech therapy, and in one case with an average duration of 10 to 15 days. Three other centers reported to use ATBP, although not systematically, 9 (39.1%) centers did not use ATBP, and 6 (26.1%) additional centers did not respond.

Conclusions: In order to reduce the risk of infection related to leech therapy, measures of prevention before application to patient are necessary, although further works are obviously necessary to bring more evidence. A multidisciplinary collaboration between microbiologists, infectious disease specialists, pharmacists and the infection control team is highly advised to prevent infection related to leech therapy, monitor nosocomial outcomes and to maintain this risk as low as possible.