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Investigation and Management of an *Elizabethkingia meningoseptica* Bacteremia Outbreak in a Regional Hospital in Southern Taiwan

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Background

Elizabethkingia spp. can be found in hospital environments such as ventilator associated facilities, indwelling catheters, feeding equipment, doorknobs, water tanks, taps, toilet utensils, and hands of staffs.

Certain venerable patients including immunocompromised hosts, prolong hospital admission, individual exposure to board-spectrum antibacterial agents are at high risks of acquiring *E. meningoseptica* infection, which significantly increased mortality due to the characteristics of multidrug resistance.

Objectives

We report an outbreak survey of sepsis with *E. meningoseptica* in adult ICU patients during Aug to Sep. 2023. Among three cases of Hospital-associated infection, there were two catheter-related bacteremia, the remaining one was pneumonia complicated with bacteremia.

Methods

During 2023 Aug. to Sep., there were 172 samples collected from sputum, blood, bronchial lavage, and twenty-six yielded *E. meningoseptica.* Tracing back from Jan to July, only sixteen positives in 377 sample($p<0.001$), which depicted an outbreak in adult ICU. Total twenty-one spots were surveyed and specimens collected including mechanical ventilations, nebulizing tools, feeding equipment, working station, stuff hands, water taps water, tanks and sonogram probs. Infection control nurse also observed the hand hygiene compliance of ICU stuffs.

Results

Connect tubing of ventilator and humidified wastewater collector were positive for *E. meningoseptica.* Incorrect metho to evacuate the wastewater in tubing, insufficient of wastewater collectors in each ventilator, wearing gloves from patient room to working station were observed. Also feeding equipment and nebulizing tools placed too close to water tank which are prone to contamination.

Infection control measures were instituted: 1. Environment disinfection was applied twice a day. 2. Relocate feeding equipment and nebulizing tools away from water tank.3. Implant and emphasized the compliance of VAP(ventilator associated pneumonia), CABSI(catheter associated bloodstream infection) bundle care and hand hygiene. 4. Educated nurse stuff using adequate tubing and collector. 5. Use proper metho to remove the humidified wastewater in ventilator tubing. 5. Antimicrobial stewardship program promotion.

Conclusions

We followed the consecutive period after measures mentioned above, only four samples were positive for *E. meningoseptica* which indicated the effectiveness of infection control after intervention.

We reported a sepsis with *E. meningoseptica* outbreak in a reginal hospital adult intensive care unit and how we efficiently tackle multidisciplinary infection control measurements despite no available of Pulsed-field electrophoresis nor Whole genome sequencing.

Aggressive efforts to identify possible sources should be made and enhanced staff hand hygiene and prompt antimicrobial stewardship are recommended.

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