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DIVERSITY AND RESISTANCE PROFILE OF STINGRAY BACTERIA (CHONDRICHTHYES: POTAMOTRYGONINAE) FROM THE AMAZONAS AND TAPAJÓS RIVERS, IN SANTARÉM, PARÁ, BRAZIL.

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RESUMO

Stingrays from the Potamotrygoninae subfamily are commonly found in the Amazon region. They are animals with venoms, which can cause accidents due to the stinger on the back of the tail. Bacteria and mucus from the epithelial tissue that covers the stinger penetrate the skin and cause acute clinical manifestations with systemic complications. This study aimed to characterize the cultivable skin microbiota and the antimicrobial profile of stingray bacteria, relating it to accident notifications registered in the Notifiable Diseases Information System (SINAN) in Santarém, Pará. The animals were captured using a longline and hand line and collected in the Amazon (Lago Maicá) and Tapajós (Alter do Chão) rivers, 4 stingrays of both sexes. After capture, weight (g) and length (cm) were obtained, and the skin material was collected with a swab from the dorsal region, from the head, through the tail to the animal's stinger. In the laboratory, serial dilutions of the skin smear were obtained, from 10⁻¹ to 10⁻⁵, seeded in PCA culture medium (Himedia®), bacterial isolation in TSA medium (Kasvi®) in culture at 37 °C for 24h, followed by morpho-tinctorial and biochemical tests. The antibiotic resistance phenotype was performed using the Kirby-Bauer method and disk diffusion on Müeller-Hinton Agar (Kasvi®), 8 antimicrobials were tested, and the resistance halos measured were compared with standard measurements. Gram-positive bacteria (93%) were most representative among 76 isolated strains, divided into 8 taxa. The most abundant bacterial genera were *Staphylococcus*, *Clostridium*, and *Corynebacterium*. Among these, 61% showed resistance to at least one antibiotic, and 25% showed concomitant resistance to 4 antibiotics, with Oxacillin (31%), Penicillin (28%), and Ampicillin (24%) being the most common antibiotics among resistant strains. According to SINAN, between the years 2019 and 2023, the number of accidents with stingrays reported in the municipality of Santarém was 214, with the highest occurrence in 2021 with 63 cases, followed by 2022 (50/214) and 2023 (40/ 214), September and December were the months with the highest incidence. The cases presented clinical manifestations such as pain, edema, ecchymosis, and local necrosis. It is essential to highlight that this is a pioneering study of the skin microbiota and the resistance profile of stingray isolates collected in the Amazon region and in two types of waters. Molecular identification is conducted by sequencing the 16s gene of the tested bacteria, and in vitro conjugation analyses are performed.

PALAVRAS-CHAVE: skin tissue, Infection, Ray, Antibiotics

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