Characterization of antibiotic resistance patterns and virulence factors in *Vibrio* spp. isolated from poultry litters, water, and feed at Obafemi Awolowo University, Ile-Ife research farm, Nigeria

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Vibrio is a diverse genus of bacteria commonly found in various aquatic and marine environments and responsible for cholerae diseases in humans when ingested with contaminated food and water. The use of antibiotics for the treatment of diseases in humans and their introduction to animal feed has led to the emergence of antibiotic-resistant strains of *Vibrio* bacteria which poses a significant challenge in effectively treating and controlling *Vibrio* infections, as these resistant strains are less susceptible to the effects of antibiotics. The study investigates the virulence factors and antibiotic resistance patterns of *Vibrio* spp. in poultry litter, feed, and water from two poultry houses at Obafemi Awolowo University Research Farm Ile-Ife Nigeria. The samples were enriched in 5 mL alkaline peptone water 1:10 (w/v) and incubated at 37 ^{o}C for 18 hours prior to isolation. The enriched samples were cultured on Thiosulphate Citrate Bile salt (TCBS) agar, and the *Vibrio* isolates obtained were characterized by Gram staining and subjected to biochemical tests. The isolates were screened for haemolytic, proteolytic activity, and antibiotic resistance by disk agar diffusion method. A total of 100 isolates were obtained and identified as *V. parahaemolyticus* (49%), *V. cholerae* (26%), *V. vulnificus* (11%), *V. alginolyticus* (9%), and *V. damsela* (5%). Among the isolates, 17% exhibited alpha haemolysis, 61% beta haemolysis, and 22% gamma haemolysis, while 29% exhibited proteolytic activity. The *Vibrio* isolates demonstrated species- or strain-specific resistance to different antibiotics tested, indicating 99% were resistant to Gentamycin, 95% Cefixime, 96% Ofloxacin, 98% Augmentin, 96% Nitrofurantoin, 100% Ciprofloxacin, and 100% Cefuroxime. In conclusion, these findings underscore the One Health perspective by demonstrating that *Vibrio* isolates found in poultry litter, feed, and water exhibit substantial resistance to multiple clinically important antibiotics. Furthermore, a significant proportion of these isolates may carry virulence factors that enhance their potential to cause disease. The observation of high beta haemolysis prevalence suggests that these isolates could pose a considerable risk for severe infections, emphasizing the interconnected relationship between animal, environmental, and human health within the One Health framework.

Keywords: Beta haemolysis; Pathogenicity; Proteolytic activity.

Caracterização dos padrões de resistência a antimicrobianos e fatores de virulência em *Vibrio* spp. isolados de camas, água e ração de aves na fazenda de pesquisa da Universidade Obafemi Awolowo em Ile-Ife Nigéria

Víbrio é um gênero diverso de bactérias que podem causar doenças em humanos. Este estudo investigou fatores de virulência e resistência a antimicrobianos de *Vibrio* spp. isolados em camas, ração e água de galinhas. Foram obtidos 100 isolados, dentre eles 61% apresentaram beta hemólise enquanto 29% apresentaram atividade proteolítica, 99% eram resistentes a Gentamicina, 95% a Cefixima, 96% a Ofloxacina, 98% a Augmentin, 96% a Nitrofurantoína, 100% a Ciprofloxacina e 100% a Cefuroxima. Este estudo aponta alta resistência de *Víbrio* spp. a antimicrobianos comuns na rotina clínica e fatores de virulência que influenciam em sua patogenicidade, o que impacta diretamente na saúde humana e animal pelo potencial de ocasionar infecções graves.

Palavras-chave: Beta hemólise; Patogenicidade; Atividade proteolítica.