2024–2025 年禽類肉毒桿菌中毒檢驗概況

疾病診斷組

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摘要

禽類肉毒桿菌中毒症係由肉毒桿菌（*Clostridium botulinum*）產生之神經毒素所引起，為候鳥及水禽重要之死亡原因之一，其中以 C 型及 D 型毒素最常見於禽類病例。彙整本所疾病診斷中心於 2024 年及 2025 年受理之疑似禽類肉毒桿菌中毒案例，以瞭解臺灣野鳥肉毒桿菌中毒症之發生情形。統計期間內共受理 181 件疑似案例，其中 47 件（26.0%）檢測陽性。2024、2025 年分別收件 113 及 68 件，陽性分別為 31 及 16 件。檢測方法包括小鼠接種試驗及分子生物學檢測，其中 11 件為血清樣本則以小鼠試驗檢出肉毒桿菌毒素陽性，其餘 36 件死亡禽類或臟器則以分子生物學方法檢測毒素基因並進行型別分析。陽性案例主要分布於臺南市、嘉義縣及高雄市沿海濕地地區，以黑面琵鷺 22 件為主，其餘包括反嘴鴴及蒼鷺等水禽；病例發生時間多集中於每年 11 月至翌年 3 月。毒素基因分型結果顯示，C 型 21 件（58.3%），C/D 混和型 15 件（41.7%）。結果顯示，肉毒桿菌中毒症持續威脅臺灣候鳥及水禽族群。透過疾病診斷案件之彙整與病原分析，可增進對臺灣野鳥肉毒桿菌中毒症流行情形及基因型別了解，並作為相關防治措施之參考。

Overview of Avian Botulism Diagnostic Testing in 2024–2025

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Abstract

Avian botulism is caused by neurotoxins produced by *Clostridium botulinum* and is one of the important causes of mortality in migratory birds and waterfowl. Among avian cases, toxin types C and D are the most commonly reported. This study summarized suspected avian botulism cases submitted to the Disease Diagnostic Center of our institute during 2024 and 2025 to understand the occurrence of avian botulism and the distribution of toxin types in wild birds in Taiwan. During the study period, a total of 181 suspected cases were received, of which 47 (26.0%) tested positive. In 2024 and 2025, 113 and 68 cases were submitted, respectively, with 31 and 16 positive cases, respectively. Diagnostic methods included mouse inoculation tests and molecular biological assays. Among these, 11 serum samples were positive for botulinum toxin by mouse bioassay, while the remaining 36 cases involving dead birds or organ samples were tested by molecular methods for toxin genes and toxin typing. Positive cases were mainly distributed in coastal wetland areas of Tainan City, Chiayi County, and Kaohsiung City, with black-faced spoonbills accounting for the majority (22 cases), followed by pied avocets and grey herons. Cases occurred mainly from November to March of the following year. Toxin gene typing results showed that 21 cases (58.3%) were type C and 15 cases (41.7%) were C/D mosaic type. The results indicate that avian botulism remains a significant threat to migratory birds and waterfowl populations in Taiwan. The compilation of diagnostic cases and pathogen analysis can enhance understanding of the occurrence and toxin type distribution of avian botulism in wild birds in Taiwan and provide a reference for related disease prevention and control measures.