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Antifungal susceptibility and virulence on murine model of *Aspergillus fumigatus* environmental isolates from a public tertiary hospital in Metro Manila, Philippines

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The increase in the number of invasive *Aspergillus* infections has been observed among immunocompromised individuals. There is also an elevated incidence of invasive aspergillosis among hospitalized patients. In the Philippines to date, there is no published data that focused on the prevalence of *Aspergillus* species or any other thermotolerant fungal species in a hospital environment. Ten isolates of *A. fumigatus* were preserved from the previous unpublished study of the principal investigator on this recent research, where an environmental air sampling using Andersen Air Sampler was conducted in six wards of a public tertiary hospital in Metro Manila. This research served as a preliminary study to characterize the antifungal susceptibility of environmental isolates of *Aspergillus fumigatus* from a hospital facility against three antifungal agents. Moreover this study conducted an animal survival analysis to determine the virulence of these isolates on BALB/c mice. Lung tissues of infected mice were also subjected to histopathology. Etest result for antifungal susceptibility testing showed that two isolates were resistant (Non-Wild type) to amphotericin B (AF2-A and AF-3A); one isolate resistant to voriconazole (AF2-A) and an isolate that manifested non-susceptibility to caspofungin (AF2-A). Epidemiological cut-off values were determined for each antifungal following the M38-A2 CLSI guidelines. BALB/c mice survival analysis revealed that the isolate with the highest Minimum Inhibitory Concentration (MIC) for voriconazole resulted to the most number of mortality with the least number of observation days. Gomori Methenamine Silver stain (GMS) and Hematoxylin & Eosin (H&E) histopathology slides showed fungal elements embedded in lung tissue of mice.

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