

Eleven-year Laboratory Surveillance Of Clinical *Aspergillus* Isolates In Pakistan: Persistent Predominance Of *Aspergillus flavus*

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INTRODUCTION

Aspergillus species can cause life-threatening infections in immunocompromised patients. *Aspergillus* epidemiology varies geographically. Species-level identification is important because they differ in pathogenic potential and antifungal susceptibility. Long-term Pakistani surveillance data are limited.

OBJECTIVES

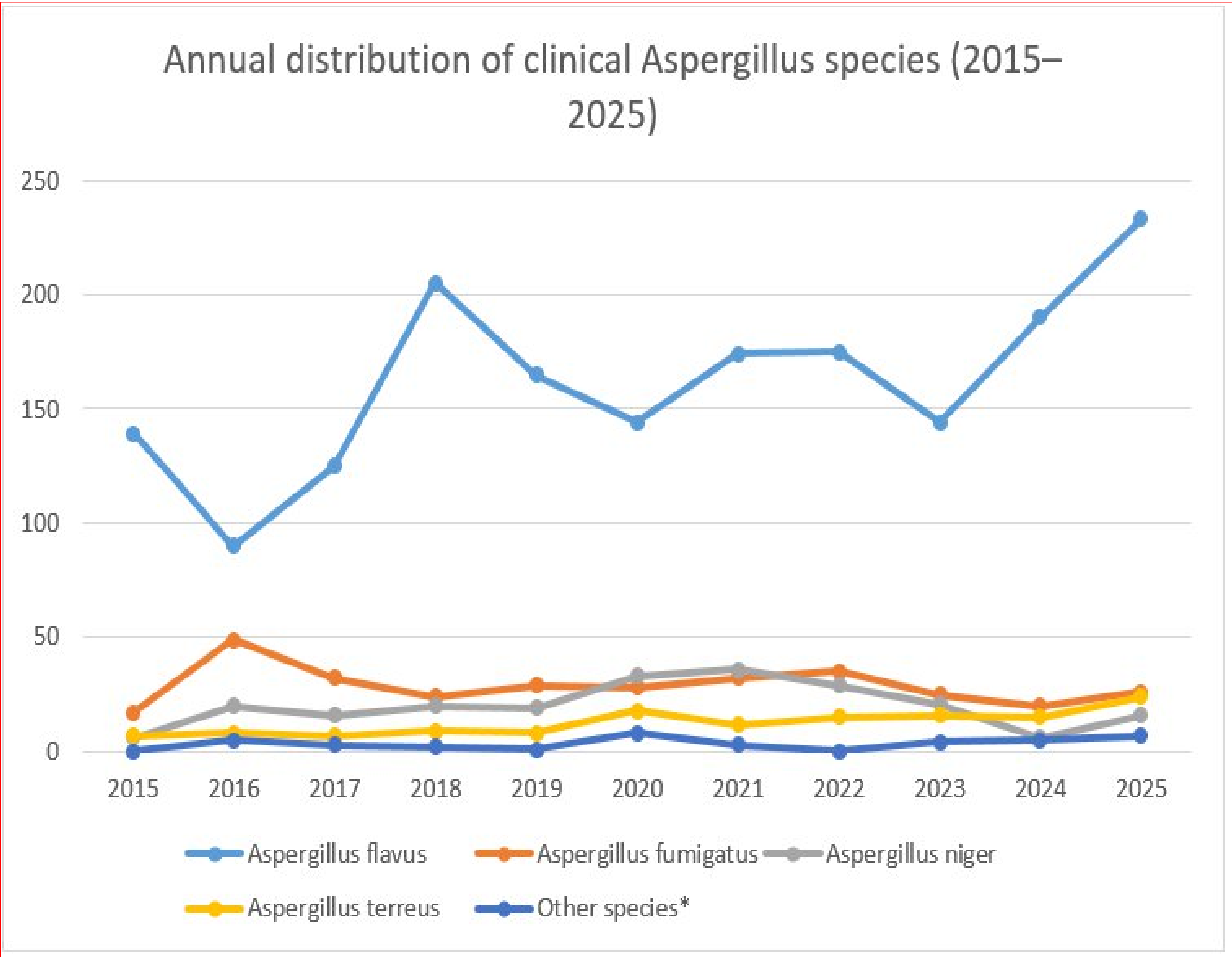
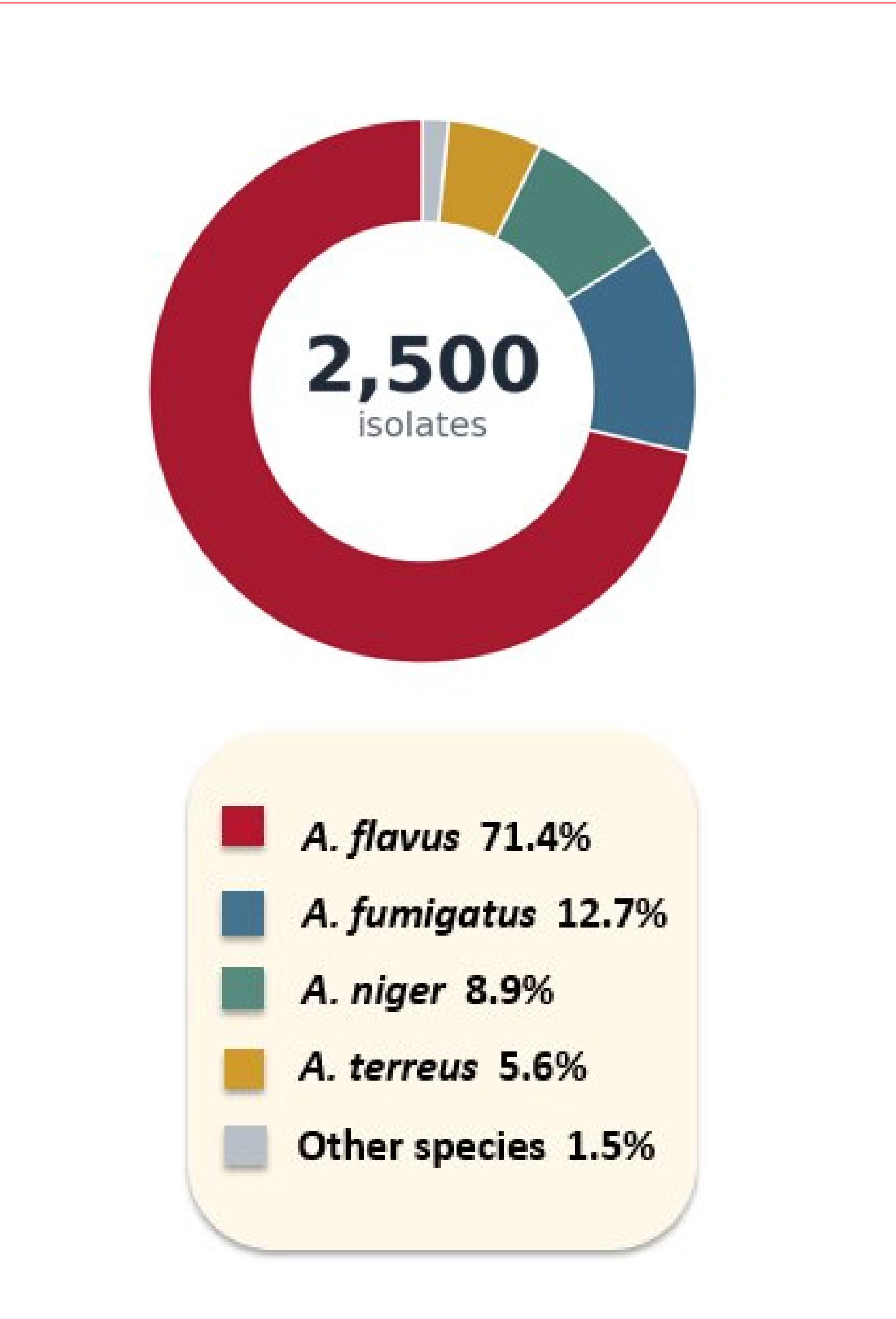
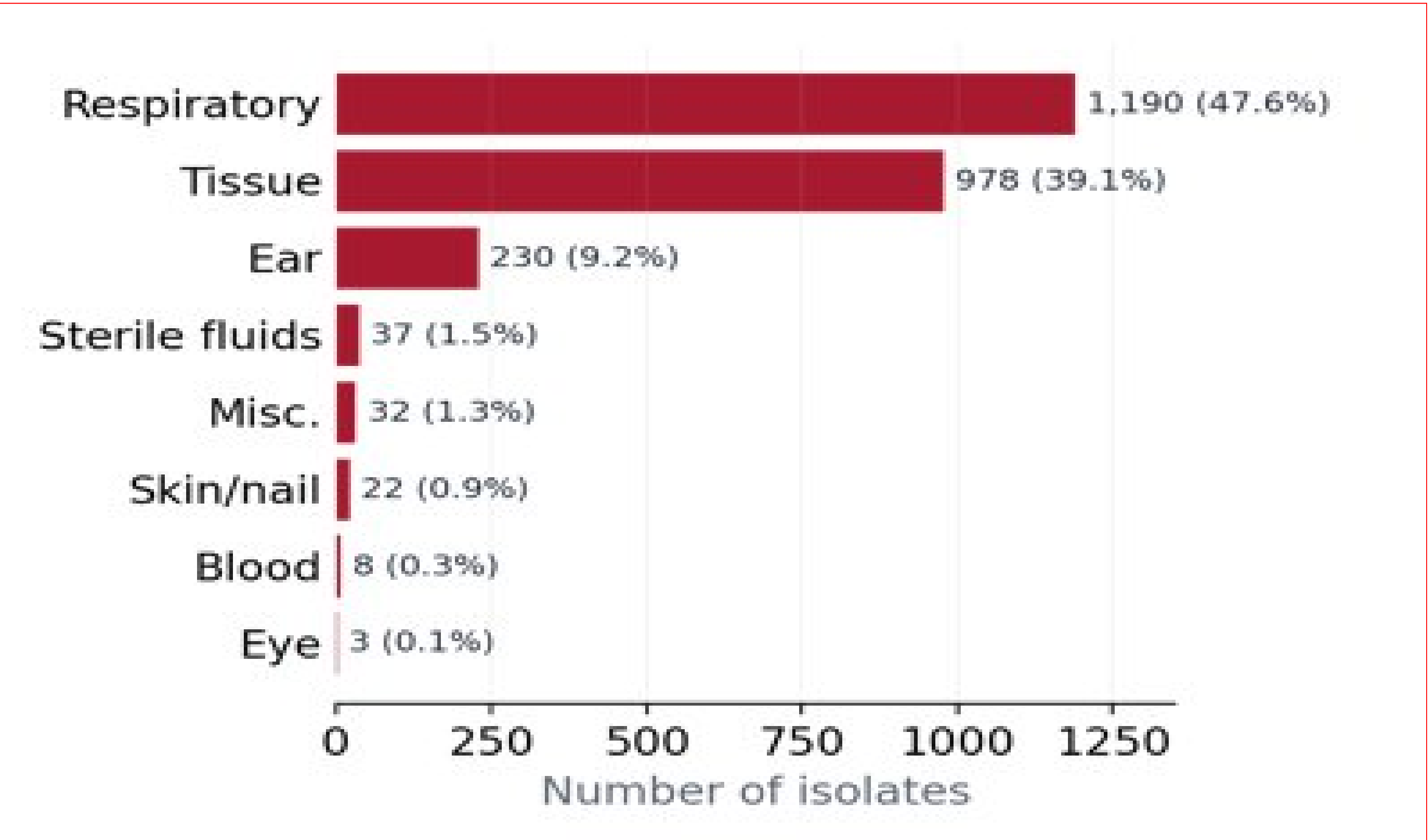
To characterize species distribution, specimen sources and temporal patterns over 11 years.

METHODS

- Retrospective lab-based surveillance study
- Duration: January 2015-December 2025
- Setting: Microbiology section, SKMCH&RC
- Inclusion criteria: clinically significant, non-duplicate isolates
- Method: Culture on SDA at 25°C & 37°C + PDA at 25°C, incubation 4 weeks
- Identification: Macroscopic + microscopic morphology on LPCB

RESULTS

- *A. flavus* was the predominant species, comprising 71.4% (1,784/2,500) of all isolates, followed by *A. fumigatus* (12.7%, 317/2,500), *A. niger* (8.9%, 222/2,500), and *A. terreus* (5.6%, 139/2,500).
- Persistent *A. flavus* predominance supports a distinct regional epidemiological pattern.
- Species-level identification matters because *Aspergillus* species differ in tissue tropism and antifungal susceptibility.
- These data provide a baseline for future surveillance and resistance monitoring.



CONCLUSION

Across 11 years, *Aspergillus flavus* remained the dominant clinical species in Pakistan (>70%), with a stable distribution across diverse specimens. Continued species-level identification and antifungal-resistance surveillance are warranted.

Strengths: Large 11-year dataset • Nationwide referral network • Standardized laboratory processing • Consultant review of culture significance and identification

Limitations: Retrospective design • No detailed clinical outcomes • Morphology-based identification without molecular confirmation • Routine AFST not available • Single testing institution

