Diversity of clinically relevant *Fusarium* species complexes: preliminary analysis of an 11-yr prospective surveillance in France

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BACKGROUND /OBJECTIVES

Fusarium spp. are implicated in human and animal infections with many different clinical manifestations, from keratitis to deeper infections. At least six species complexes (SC) have been involved in these infections. Our aim was to dissect the association between clinical manifestations and *Fusarium* species using the surveillance systems implemented in France since 2005 at the NRCMA.

Type of surveillance system at the NRCMA	Period	# hospitals	# cases
RESSIF active	2012 - 2016	26	154
RESOMYC semi-passive	2005- 2016	54	228

METHODS

- The phylogenetic analysis of strains was based on DNA sequence data for the elongation factor 1- α (*TEF-1 α*) and the RNA polymerase II subunit (*RPB2*) regions.
- Antifungal susceptibility testing was performed for 8 antifungals according to EUCAST recommendations.

RESULTS I

MAJOR DIFFERENCES between ocular and deep FUSARIOSIS

Fusariosis	OCULAR (n=216)	DEEP (n=166)	p
Male ratio	39%	60%	<0.001
Median age $\pm$ IQR	39 $\pm$ 27	56 $\pm$ 28	<0.001
Underlying immunosuppression	2.7%	78.3%	<0.001
Local injury	97.3%	21.7%	

- Among the **216 ocular cases**, keratitis and corneal ulcer were the main presentations. The **wear of contact lenses** was reported in 146 (68%) cases with a female predominance. *Fusarium oxysporum* SC was the main species recovered (44%).
- In **deep infections (n=166)**, fungemia was present in **43%** associated predominantly to **immunosuppression** (hematological malignancies, solid tumors and SOT)
- Elevated MICs values** for the four complexes were observed for azoles, candins and AMB **EXCEPT** for *F. dimerum* SC which had lower values for voriconazole, amphotericin B and terbinafin

RESULTS II

EF1-alpha topology for 347 strains (202 ocular, 145 deep)

DISCUSSION/PERSPECTIVES

- Association** between clinical manifestations and *Fusarium* complexes in a **large cohort (n=382)** of patients
- Members of the *F. fujikuroi* SC were **significantly** associated with immunocompromised patients and disseminated fusariosis
- Studies to investigate these preferential associations are ongoing.