

P1204 **Candida albicans** from blood cultures and grouped in clusters are more prone to biofilm formation than singleton genotypes

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Background: Isolates involved in clusters (identical genotypes infecting different patients) may be well adapted to persist in the environment by forming biofilms. We aimed to study and compare the biofilm production in isolates involved in clusters and isolates showing singleton genotypes.

Materials/methods: We analyzed 228 clinical strains of *C. albicans* (n=125) and *C. parapsilosis* (n=103) involved in 46 and 28 clusters, respectively, from patients with candidaemia admitted to hospitals located in three European countries from 2014 to 2015. Biofilm production was studied by measuring the biomass by application of crystal violet stain (CV) and by measuring metabolic activity with XTT. We compared the biofilm production between isolates involved in clusters and singleton control isolates (216 *C. albicans* and 87 *C. parapsilosis*). Isolates were classified as low (LBF), moderate (MBF), or high (HBF) biofilm-forming and as having low (LMA), moderate (MMA), or high (HMA) metabolic activity.

Results: Most *C. albicans* isolates in clusters were HBF (60%) or MBF (40%), and HMA (79%). *C. parapsilosis* isolates in clusters were MBF (30%) or LBF (43%), and HMA (45%) or LMA (43%). About 85% of the isolates involved in the same cluster showed the same metabolic activity (90% *C. albicans*, 79% *C. parapsilosis*), and 65% of them had similar biomass production (59% *C. albicans*, 72% *C. parapsilosis*). The metabolic activity and biomass production was significantly higher ($p < 0.001$) in *C. albicans* isolates in clusters than isolates with singleton genotypes (Table); no significant differences between clusters and singleton isolates were reached for *C. parapsilosis*.

Biofilm quantification	Geometric means (\pm standards deviation) (Significant differences are marked in bold)					
	<i>C. albicans</i>		<i>C. parapsilosis</i>		Overall	
	Cluster	Singleton	Cluster	Singleton	Cluster	Singleton
CV	1.25 \pm 0.36	1.09 \pm 0.56	0.72 \pm 0.56	0.76 \pm 0.53	1.01 \pm 0.53	1.0 \pm 0.57
XTT	0.36 \pm 0.21	0.22 \pm 0.26	0.20 \pm 0.19	0.20 \pm 0.19	0.29 \pm 0.21	0.22 \pm 0.24

Conclusions: *C. albicans* isolates causing candidaemia and involved in clusters showed significantly more biomass production and metabolic activity than singleton genotypes.