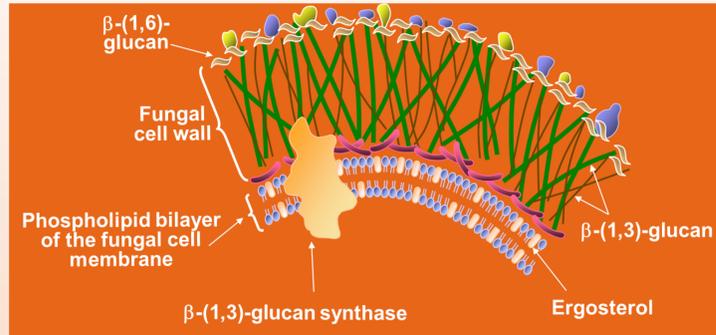


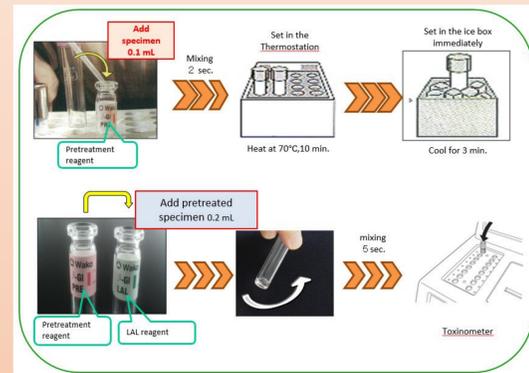
Evaluation of Wako beta-glucan test performance in diagnosing invasive fungal infections

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Background

Nowadays the beta-D-glucan (BDG) assay is widely used worldwide as biomarker for diagnosing invasive fungal infections and it has gained a pivotal role especially for ruling out invasive candidiasis and in guiding decisions to antifungal agent de-escalation in high risk patients. Very recently, the Wako β -glucan test (GT) was launched in Europe. We conducted a comparative analysis of the GT and the Fungitell Assay (FA) in serum samples from 328 patients.



Materials/methods

To evaluate the performance of the GT, serum samples from patients with suspected candidiasis, aspergillosis, *Pneumocystis jirovecii* pneumonia (PJP) or from patients without fungal infections (negative controls), were tested using both the FA and GT in the same day, accordingly to the protocol supplied by the respective manufacturers. The data obtained from the colorimetric (FA) or turbidimetric (GT) assays were analysed using cut-off values of 80 pg/mL and 11 pg/mL, respectively, and, only for the GT assay, also using a cut-off value of 7 pg/mL.

Group (no. of samples)	FA sensitivity (%)	GT sensitivity (%)	
		11 pg/mL	7 pg/mL
Candidiasis (82)	98.8	91.5	97.6
Aspergillosis (42)	88.1	71.4	83.3
PJP (17)	100	100	100

Results

The 328 sera included in the study were divided into four groups, namely candidiasis, aspergillosis, PJP and negative controls, according to the clinical and microbiological data. Sensitivities for the FA and GT assays were 98.8% and 91.5% in the candidiasis group, 88.1% and 71.4% in the Aspergillosis group, and 100% in the PJP group, respectively.

By lowering the GT cut-off value to 7 pg/mL, sensitivities increased to 97.6% and 83.8% in the candidiasis or aspergillosis groups, respectively.

Conclusions

When applying the positivity cut-off value of 7 pg/mL, the GT assay shows a good performance, which is comparable with that of the FA assay. Furthermore, due to its easy setup, the GT assay could be indicated even in laboratories with a reduced routine workflow.

References:

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