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P0131 Prognostic values of serum galactomannan and (1-3)-beta-D-glucan in hospitalised patients: analysis of initial and follow-up results

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Background: Serum galactomanann (sGM) and (1-3)-ß-D-glucan (sBDG) are used for diagnosis of invasive fungal infection (IFD). We analyzed the results of the sGM and sBDG and explored prognostic values of these markers in hospitalized patients.

Materials/methods: From January 2017 to June 2018, a total of 2,420 pairs of simultaneous sGM and sBDG tests from 283 patients (IFD [n = 35], non-IFD [n = 248]) were analyzed. The sGM and sBDG levels were measured using Platelia *Aspergilus* galactomannan antigen enzyme immunoassay (Bio-Rad Laboratories, Redmond, WA, USA) and Goldstream Fungus (1-3)-β-D-glucan test (Gold Mountain River Tech Development, eijing, China), respectively. Patients were divided based on initial and follow-up results of sGM or sBDG into group I (negative), group II (negative converter) and group III (positive or positive converter). Univariate and multivariate logistic regression analyses were used to identify predictors of 30-day mortality.

Results: Initial and overall positive rates of sGM or sBDG were 9.9%/14.8% and 11.8%/11.3%, respectively. The concordance rate of 2,420 pairs of sGM/sBDG results was 80.1% (both positive 1.6% and both negative 78.5%). The sGM negative/sBDG positive and sGM positive/sBDG negative were 10.2% and 9.7%, respectively. All-cause 30-day mortality was 14.2% (n = 34/240), 0.0% (n = 0/9), and 21.4% (n = 6/28) in sGM group (group I and II vs. III, *P* = 0.0664) and 12.6% (n = 28/222), 5.6% (n = 1/18), and 28.9% (n = 11/38) in sBDG group (group I and II vs. III, *P* = 0.0060) (group I, II, and III, respectively). In univariate and multivariate analyses, age (≥65 yrs), IFD, and sBDG group III were significant predictors for 30-day mortality (odds ratio, 2.5 [95% CI, 1.2 – 5.3], 3.3 [95% CI, 1.4 – 7.7], I3.0 [95% CI, 2.5 [1.1 – 5.9], respectively).

Conclusions: Since the sGM and sBDG results overlaps in only small portion of patients, two markers could be used complimentarily. Positive converters/consistent positive sBDG showed significantly higher mortality than negative converters/consistent negative sBDG, suggesting the values of follow-up tests. sBDG had more prognostic values than sGM. Further controlled studies are needed to validate sBDG as a prognostic marker.