Session: 6. Fungal infection & Disease

**Category: 6b. Diagnostic mycology (incl molecular)**

**The Diagnostic Value of Fully Automatic Instrument for (1-3) -β-d-glucan Test in Patients with Tumour**

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**Background:** Globally, over 300 million people are afflicted with a serious fungal infection and 25 million are at high risk of dying or losing their sight. Invasive fungal infections (IFIs) in patients with tumour is one of most commonly fungal infections. Currently, fungus (1-3)-β-D-glucan (BG) test is a widely recommended and used technology for the detection of pan-fungal infections. However, BG test has high requirements for the personnel operation and high frequency of false-positive results. Thus, BG test has a limited usefulness as a screening method for IFIs in patients with tumour. To solve this problem, Genobio Fully Automatic Kinetic Tube Reader（IGL-200）was introduced to make BG test automated.

**Objectives:** To evaluate the clinical usefulness of fully automatic instrument for BG test in patients with tumour.

**Method:** 175 patients who had undergone anticancer treatment cycles with an intermediate and high risk of IFI were enrolled in our study. All samples were tested by both manual BG test and automatic BG test. The final detection results were compared with clinical evidences and diagnostic from hospital.

**Results:** Depending on the criterion of positivity used (1×>60 pg/ml, 1×>80 pg/ml, 2×>60 pg/ml or 2×>80 pg/ml), the sensitivity and specificity of manual BG test were 87.6% and 28.2%, 86.6% and 50%, 68% and 34.6%, 51.5% and 56.4% respectively, and the sensitivity and specificity of automatic BG test were 86.6% and 35.9%, 86.6% and 55.1%, 69.1% and 44.9%, 51.5% and 69.2 % respectively.

**Discussion:** The results show that the manual BG test has basically the same sensitivity as the automatic BG test, but the automatic BG test shows better specificity, and the false positive rate of automatic BG test is significantly reduced. This could be caused by the automatic BG test provides a closed system in which the contamination rate is significantly reduced. Besides, automatic BG test is not easily affected by operators and permits a more accurate and quick result, benefits clinical laboratory with its highly efficient and intelligent.

**Conclusions:** Introducing IGL-200 to make BG test automated can effectively reduce personnel interference and false positive rate, provides more accurate results, fully ensure the screening significance of BG test, it has important clinical value.