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P2187 Rapidly diagnosing *Pneumocystis jirovecii* in patients with severe pneumonia using a next-generation sequencing technique: a retrospective case series study

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Background: Pneumocystis jirovecii is an important human pathogen which causes pneumocystis jirovecii pneumonia (PCP), particularly among immunocompromised patients with acquired immunodeficiency syndrome (AIDS). Recently the incidence of PCP in patients with no AIDS has been increasing as immunosuppressants become more widely used. Mortality of PCP depends upon the underlying disease and closely related to time of receiving targeted therapy. Therefore, rapidly diagnosing for PCP would be of great value. Since the occurrences of next generation sequencing (NGS) technique, we seem to find a new way.

Materials/methods: A retrospective chart review was performed of all patients admitted to our department of infectious disease as well as the general intensive care unit from September 2017 until July 2018 who were diagnosed with PCP. The PCP was diagnosed by next generation sequencing technique using induced sputum, bronchoalveolar lavage fluid and blood. Some of the results were checked and confirmed by the PCR detection.

Results: 9 of the 12 patients were under immunocompromised situations. The most common symptoms in these patients were obvious anhelation (91.7%), fever (75.0%) and irritable dry cough (50.0%). 7 (58.3%) patients were presenting as bilateral diffuse infiltration distributing. The average oxygenation index (PaO2/FiO2) average was 267.3mmHg on admission. The most remarkable laboratory characteristic of decreased CD4 cells count (75.0%) of 137 cells per microliter and elevated level of serum 1-3-β-glucan of 153.2 pg/mL. 11 (91.7%) patients were tested with co-infections with either CMV of EBV. 20 (76.9%) out of 26 samples collected from all the 12 enrolled patients were P. jirovecii positive. The average testing time was 2.7 days and report time to admission was 7.9 days. The mortality rate of this study was about 33.3%, which was lower than most literature reported. According to our study, the CD4+ cells count, PCP reads and co-infection with CMV might be meaningful risk factors.

Conclusions: Comparing to traditional detecting method, the NGS could provide faster and more accurate value in identifying of PCP, especially in those patients under co-infections with viruses, which could impressively shorten the diagnosing time and might help to improve the prognosis.