Editorial

Importance of standardized treatment on community-acquired infection

Infectious diseases are a class of the high incidence and a common diseases threat human health, the prognosis of these diseases depend on three factors of the original application, host immunity, and the pathogenesis of anti-infective drugs. The same disease, such as community-acquired pneumonia (CAP) in different countries and regions, its composition and pathogen resistance have quite different characteristics. Therefore, the diagnosis and treatment of infectious diseases should not copy foreign guidelines, we must work out our own guidelines and expert consensus consistent with evidence-based medicine, carefully refer to the promotion and implementation, and continue to modify and improve them in practice.

A variety of pathogens such as viruses, protozoa, atypical pathogens, bacteria, fungi, etc., causes infectious diseases. Compared with hospital infection, fungi and multi-drug-resistant bacteria are rarely seen, virus and ordinary bacteria are more common in community-acquired infection (CAI). In general, there is more effective treatment alternative; the prognosis is better than a hospital infection. However in recent years, community-acquired pathogens constitute and drug resistance is constantly changing, which makes treatment more difficult, it deserves us pay a high attention.

In hospitalized patients, the infections incidence in the community is 2-4 times than that in hospitals. Compared with the surgery department, there is a higher incidence among internal medicine inpatient (community infection 13.9%, hospital infection 3.0%).[1] The most common involvement site of community infection were respiratory tract (46%), followed by urinary tract (11%), digestive tract (11%) and skin and soft tissues (8%),[2] CAP and chronic obstructive pulmonary combined with infection are most common in lower respiratory tract infections (45.2% and 22.6%, respectively).[3]

Less information on infection incidence of nonhospitalized patients in the community can be found, in which those about respiratory infections (including upper respiratory tract), gastrointestinal tract, skin and urinary tract infections are more. In general, viral upper respiratory tract infection is more common. In addition to flu, it is very few targeted antivirals; the effect is limited, too. We mainly take symptomatic treatment approaches at present. Except for high-risk populations or those combined bacterial infection, antibiotics should not be used during viral upper respiratory tract infection. However, in our country, especially in the pediatric department, some patient inappropriate use of antibiotics is still relatively common. As for outside hospital-acquired simple urinary tract infections, treatment is not difficult, the prognosis is good, as long as the patients drink more water to "wash" urinary tract, they will expect to recover. *Escherichia coli* is the most common pathogenic bacteria in urinary tract infection. Different from foreign, *E. coli* has high resistance rate to quinolones in our country. Although it is still recommended in some documents, but its effect is very doubtful.

In summary, lower respiratory tract infection has a higher incidence and more serious prognosis in CAIs, which is the CAP and chronic obstructive pulmonary combined with infection. The latter disease outcome depends, on one hand, anti-infection treatment is standard, on the other hand is also closely related to the severity of the primary disease. The CAP prognosis depends mainly on appropriately and timely anti-infection treatment, but it is also one of the major challenges, which clinicians often face. In connection with the problems that should be seriously concerned during CAP treatment in our country, we especially listed below for reader's reference.

1. CAP caused by methicillin-resistant *Staphylococcus aureus* (MRSA) is more common in the United States (about 7%), due to community MRSA produce periventricular leukomalacia, it is worthy of attention for dangerous disease condition. However in our country, there is little diagnose reports of CAP caused by MRSA, so we estimate that the incidence rate is not high, but this still needs to be confirmed by epidemiological studies.
2. In recent years, many researches have confirmed that macrolides resistance rates and the degree of *Streptococcus pneumoniae* in our country are much higher than that in Europe, America region. Although the macrolide concentration in lung tissue is higher than that in serum but due to the difference between mediated resistance genes, a higher degree of *S. pneumoniae* resistance in our country, we cannot expect "drug resistance *in vitro* and effectiveness *in vivo*"

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American Thoracic Society guidelines 2007 version explicitly recommend macrolide resistance rates ≥25% and minimum inhibitory concentration >16 μg/L cannot be selected,[4] these two indicators are far beyond in our country.

3. Many domestic scholars reported whether child or adult, macrolide resistance rates of mycoplasma pneumonia are high, as the highest in the world. For this reason, Specialist Infection Society Group also published expert consensus to draw attention.[5] However, this drug really have much impact on the clinical efficacy is not fully understood, further research is needed to confirm.
4. G^- bacterium, *Klebsiella pneumoniae* and *E. coli*, are common in CAP, a relatively higher proportion existed in the elderly. These two kinds of bacteria produce extended-spectrum beta-lactamases and the ratio of quinolone resistance is high. It will lead to treatment failure according to current guidelines and abroad medication. I recently encountered two cases of continuous clinical diagnosis of the exact elderly CAP, third-generation cephalosporins and respiratory quinolone preferred combination was invalid, forced into carbapenems square and cured. The above-mentioned are personal experiences for readers' reference.

In addition to the standardized treatment in CAI, there are more to be concerned. In order to provide a platform for communication between researchers dedicated to this field, we start to edit and publish the journal CAI together with Professor Antoni Torres from Spain. CAI is an open access journal publishing articles focusing on information derived from CAI so as to optimize and provoke the communication between basic and clinical science and based on interdisciplinary and multidisciplinary integration, it covers aspects of internal medicine, surgical medicine, pediatrics, basic medical research, pharmacology, etc., involving respiratory diseases, gastrointestinal tract diseases, skin soft tissue diseases, urological system diseases, etc. By this great opportunity of launching the journal CAI and also on behalf of editors and expert team, I would like to extend my sincere gratitude to my colleagues and friends supportive of our journal, and your high-quality contributions will be greatly welcome.

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