

Garenoxacin in the treatment of community-acquired pneumonia**Biswanath Biswas¹, Anoop L. Hajare^{2*}, K. Krishnaprasad², Amit Bhargava²**¹Consultant Physician,
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properly cited.**ABSTRACT**

Community-acquired pneumonia (CAP) is a major cause of adult mortality in Asia. Empirical use of antibiotics depends on the pathogens that are commonly responsible. Evolution of resistant pathogens in CAP has added to the burden of treating physicians. Microbiological culture and antibiotic sensitivity testing are helpful for the treatment of such respiratory tract infections. *Klebsiella pneumoniae* though uncommon pathogen of CAP has been reported in many cases. Garenoxacin a newer fluoroquinolone has found its utility in the treatment of respiratory tract infections. Providing symptomatic relief to the patient with the use of analgesics, antipyretics and cough preparations are also an essential part of the management.

Keywords: Community-acquired pneumonia, Broad spectrum antibiotic, Garenoxacin, Resistance**INTRODUCTION**

Community-acquired pneumonia (CAP) is a common illness and a frequent cause for the morbidity and mortality throughout the world.¹ CAP is an infectious disease occurring in various part of the world with a rise in its incidence as the population ages. Various factors have been attributed in the pathogenesis of this illness. Some important factors are age of the population, immune status of the individual, antibiotic resistance in the community etc.² Aspiration is an important pathogenic mechanism for pneumonia in the elderly. Management of CAP especially with aspiration factors is a major challenge for the physicians. Silent aspiration has been observed in approximately 71% of the elderly patients suffering from CAP with majority of the population requiring hospitalization. Mortality rate of CAP is as high as 20%.³

CASE REPORT

A male aged 52 years approached a physician at his clinic at Kolkata with the complaints of intermittent fever and cough of 10 days duration and hemoptysis of 3 day's duration. There was no history of smoking or any chronic illnesses such as tuberculosis (TB), hypertension and diabetes mellitus. At the time of an outpatient department (OPD) visit the temperature recorded was 101°F and pulse rate was 88/min. Respiratory rate was 26/min. Patient was moderately built and nourished. There was no icterus or any generalized lymphadenopathy. On examination of the respiratory system, reduced air entry was appreciated on both the sides. On auscultation, basal crepitation was noticed in the right lower zone. Sputum sample was collected and was sent to the department of microbiology for the bacteriological profile. A chest X-ray was advised to the patient along with a computed tomography

(CT) scan. The chest X-ray showed large patchy opacities in the right mid zone and left perihilar region (Figure 1).

CT scan was suggestive of pneumonia. The patient was advised for admission but he refused. So treatment was begun on OPD basis. Garenoxacin was started at a dose of 400 mg/day (200 mg × 2 tablets OD) for 5 days. Paracetamol 500 mg TID was initiated along with cold, tepid sponging. The patient was advised for a follow-up after 5 days. 2 days later the microbiological report was received, which suggested *Klebsiella pneumoniae* and *Streptococcus pneumoniae*. The patient re-visited the physician on the 5th day of garenoxacin therapy. There was a significant improvement in the patient's symptoms. However, still some fine crepitations could be appreciated upon auscultation on the right lower zone. Garenoxacin was further continued for another 5 days at the same dose. The patient was requested for a second follow-up after the completion of therapy. On the 10th day of garenoxacin therapy patient re-visited the physician. There was complete improvement in the patient's symptoms and no crepitations were appreciated. A satisfactory clinical cure was achieved. A follow-up chest X-ray was advised to the patient for confirmation. The second X-ray showed complete resolution of patchy changes that were previously noticed (Figure 2).

DISCUSSION

Pneumonia is one of the most common infections causing substantial morbidity and mortality in elderly patients. The pathogens responsible for pneumonia in the elderly are the same as in younger adults. Impaired B-lymphocyte function predisposes to infection with encapsulated pathogens that are common causes of bacterial pneumonia such as *S. pneumoniae* and *Haemophilus influenzae*. *Moraxella catarrhalis* is of particular importance as a cause of CAP in patients with chronic bronchitis.^{4,5}

Since, organisms express themselves in a stereotypical fashion, an etiologic classification of pneumonia correlates

with the patient's signs and symptoms. Elderly patients will often have only the infiltrate, which is not always accompanied by fever or leukocytosis. Chest X-ray will be essential to rule out the conditions that may mimic pneumonia and confirm the presence of pneumonia.⁴ The selection of antimicrobial therapy for pneumonia particularly depends on the adequate coverage of the presumed pathogens. Elderly patients have various degrees of renal and hepatic impairment, which needs to be a critical factor for selection of an appropriate antibiotic.

Although about 10-20% of patients require, hospitalization and those who are hospitalized needs IV antibiotic therapy. Parenteral therapy ensures that therapeutic concentrations of the antibiotic are achieved rapidly at the site of infection at time. A number of antibiotics have been used in sequential therapy and ideally, oral and injectable forms of the same antibiotic should be used. Garenoxacin a novel fluoroquinolone with its broad spectrum of activity and superior safety appears to be an ideal fluoroquinolone in the treatment of respiratory tract infections. It is found to be against the most common pathogens associated with CAP, such as *S. pneumoniae*, *H. influenzae*, *K. pneumoniae* and *M. catarrhalis*.⁵

CONCLUSION

CAP is a major health problem witnessed globally. Treatment of CAP is a major challenge especially in elderly population. Inappropriate or injudicious use of antibiotics has increased the incidence of resistance in the community. Diagnosis of the condition should be confirmed by proper investigations including the culture and sensitivity reports. Although TB is quite common in India, one should not guess every case of cough of more than 2 weeks duration as a case of TB unless backed up by suitable laboratory reports. Empirical use of antibiotics has given success to the doctors in majority of cases but in high-risk cases especially in elderly patients, patients with associated co-morbidities, immunocompromised individuals, transplant recipients a detailed investigation is necessary.



Figure 1: Before garenoxacin therapy



Figure 2: After garenoxacin therapy

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