

# Bacteraemic E.coli Pneumonia

**Mohammed Haneef**

Koyili Hospital, Kannur, Kerala 670004

## ABSTRACT

Published on 30<sup>th</sup> December 2008

Community acquired pneumonia (CAP) remains a common and serious illness with a high morbidity and mortality despite potent antibiotics. Pneumonia is a microbial infection involving lung parenchyma

**Case Study:** In this paper a community acquired pneumonia case of a 38 old lady is reported.

Since this patient had evidence of UTI at the time of admission, and same organism was grown in urine, sputum and blood, the cause of pneumonia is bacteremic rather than hospital acquired. Most of the available reports describes occurrence of E. coli pneumonia in immunocompromised patients. This patient probably had increased susceptibility to bacteremia as she was on a short course of steroids for her back pain.

**Keywords:** Community acquired pneumonia, Escherichia coli, Urinary tract infection

\*See End Note for complete author details

## INTRODUCTION

Community acquired pneumonia (CAP) remains a common and serious illness with a high morbidity and mortality despite potent antibiotics. Pneumonia is a microbial infection involving lung parenchyma. It is a major cause of hospital admission, and ranks sixth leading cause of death in United States. The problem is much greater in countries like India. The usual causative organism is Gram positive. CAP due to E.coli is rare and carries high mortality.

## CASE HISTORY

38 year old teacher was admitted on 25.6.07 with

fever, chills and dysuria for 3 days duration. She had received prednisolone 30 mg OD for acute back pain from 22.6.07. There was no other significant illness in the past. She was not known diabetic. Initial evaluation revealed a stable vitals and no remarkable physical finding. She was admitted to the ward with a provisional diagnosis of urinary tract infection and started on ceftriaxone 1gm IV BD, pending reports. Urine analysis showed numerous pus cells and the sample was sent for culture. Complete blood count showed polymorphonuclear leucocytosis with a count of 17,500/mm.<sup>3</sup> Random blood sugar was 89 mg%. She was a febrile for a day, but developed acute dyspnoea on 2<sup>nd</sup> day of her admission. Fever spikes also increased to 104°F, physical examination at that point revealed tachypnoea

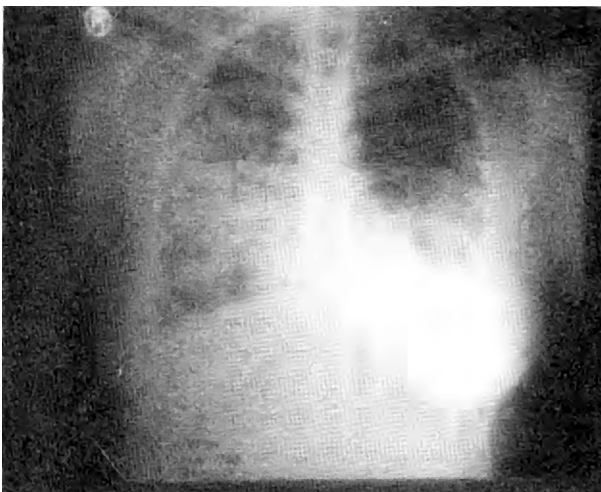


Figure 1. Chest x ray on 27.6.07 showing B/L infiltrates in the lower

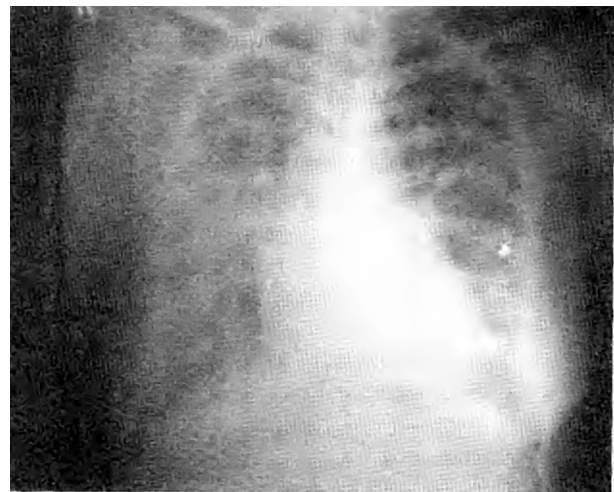


Figure 2. Chest x ray on 16.7.0, at discharge

### Corresponding Author:

Dr. Mohammed Haneef, MD (med), PGDIIIS (Diab), Consultant Physician – Diabetologist, Koyili Hospital, Kannur, Kerala 670004. Phone: 9447236625. E-mail: dr.mhaneef@gmail.com

with bilateral crepitations mainly in the lower zones. A chest radiograph was taken and showed evidence of B/L lower zone infiltrates suggestive of broncho-pneumonia. She deteriorated rapidly with fall in oxygen saturation and appearance of maculopappular rash over the trunk. Patient was shifted to ICU, antibiotic coverage was improved. Blood and sputum samples were sent for culture. Urine culture reported on 3<sup>rd</sup> day grew E.coli sensitive to amikacin and gatifloxacin. She was then started on both these antibiotics and showed improvement from 2<sup>nd</sup> day of above drugs. Blood and sputum also grew E.coli sensitive to the same drugs. Her HIV status was negative. Lung signs decreased on 5<sup>th</sup> day with disappearance of rash. Oxygen saturation was maintained at 95% and shifted to ward on 8<sup>th</sup> day. She was discharged on 16.7.07 with normal functional status and clear chest radiograph. She was reviewed ten days later and had no clinically detectable abnormality.

## DISCUSSION

Pneumonias are broadly classified as community acquired or nosocomial. Nosocomial pneumonia or hospital acquired pneumonia (HAP) is defined as pneumonia occurring at least 48 hours after hospitalization, and not incubating at the time of admission. Typical pneumonia is acquired by bronchogenic spread of pathogens. In adults 60-75% of pneumonia is due to *S.pneumoniae*.<sup>3</sup> Gram negative organisms have not been regarded as primary pathogens in the lung, but only as “opportunists”. *E.coli* is the leading cause of both community acquired and nosocomial urinary tract infection (UTI). As many as 50% of women have at least one episode of UTI in their life time. *E.coli* causes 12-50% of nosocomial infection. *E.coli* pneumonia is usually nosocomially acquired accounting for 9 % of cases reported.<sup>4</sup> The organism reaches the respiratory tract by aspiration of oropharyngeal secretion due to colonization or by haematogenous dissemination from primary source in the GIT or genitourinary tract. *E.coli* pneumonia occurring a community acquired form is rare and is seen in diabetics, alcoholics and in immunocompromised patients.<sup>1</sup> Most *E.coli* pneumonias are

broncho pneumonias, but the process can be radiographically variable. Sputum culture is usually positive in bacteremic form of *E.coli* pneumonia.<sup>5</sup> It carries a high mortality ranging from 30 - 70%. In ICU setting the risk factors for death includes shock, systemic inflammatory response syndrome a high APACHE score, bilateral infiltrates on chest radiograph and ARDS.<sup>2</sup>

Since this patient had evidence of UTI at the time of admission, and same organism was grown in urine, sputum and blood, the cause of pneumonia is bacteremic rather than hospital acquired. Most of the available reports describes occurrence of *E. coli* pneumonia in immunocompromised patients. This patient probably had increased susceptibility to bacteremia as she was on a short course of steroids for her back pain.

## END NOTE

### Author Information

Dr. Mohammed Haneef, MD (med), PGDIIS (Diab), Consultant Physician – Diabetologist, Koyili Hospital, Kannur, Kerala 670004. E-mail: dr.mhaneef@gmail.com

**Conflict of Interest:** None declared

**Cite this article as:** Mohammed Haneef. Bacteraemic *E.coli* Pneumonia. Kerala Medical Journal. 2008 Dec 30;1(2):64-65

## REFERENCES

1. Bansal S, Kashyap S, Pal LS, Goel A. Clinical and bacteriological profile of community acquired pneumonia in Shimla, Himachal Pradesh. *Indian J Chest Dis Allied Sci.* 2004 Mar;46(1):17–22.
2. Marrie TJ, Fine MJ, Obrosky DS, Coley C, Singer DE, Kapoor WN. Community-acquired pneumonia due to *Escherichia coli*. *Clin Microbiol Infect.* 1998 Feb;4(12):717–23.
3. Kulpati DD, Khastgir T. Reappraisal of pneumonias. *J Assoc Physicians India.* 1988 Nov;36(11):660–4.
4. Madhu SV, Gupta U, Guleria JS, Talwar V. Clinical and bacteriological profile of hospitalized community acquired pneumonias--a preliminary study. *Indian J Chest Dis Allied Sci.* 1990 Jun;32(2):95–100.
5. Feldman C. Pneumonia in the elderly. *Med Clin North Am.* 2001 Nov;85(6):1441–59.