



A CLINICAL STUDY OF CRP AS A PROGNOSTIC INDICATOR IN COMMUNITY ACQUIRED PNEUMONIA

**DR. G. SWARNA
LATHA DEVI**

Professor and HOD, Department of General Medicine, ASRAM Medical College, Eluru, West Godavari(D), Andhra Pradesh.

**DR. P RAVI
CHANDRA VARMA**

Post Graduate, Department of General Medicine, ASRAM Medical College, Eluru, West Godavari(D), Andhra Pradesh.

DR VIOLA RACHEL

ASSISTANT PROFESSOR, DEPARMENT OF GENERAL MEDICINE,ASRAM MEDICAL COLLEGE, ELURU

ABSTRACT

CRP being a acute inflammatory marker, demonstration of its serial rise in patients with CAP predicts the severity and outcome in these patients . We aim to study CRP levels on the day of admission and day 4, which can predict 30 day mortality, need for mechanical ventilation . This study was done with a objective to find out whether C-reactive protein is an independent predictor of severity in community acquired pneumonia.

Material and methods: *This is a retrospective study of 50 consecutive patients presented with Community Acquired Pneumonia admitted to ALLURI SITHARANARAJU MEDICAL COLLEGE, ELURU from October 2014 to May 2015. Detailed history was taken. Detailed clinical examination was done. sputum examination and chest x-ray and other relavent investigations done. CRP levels were estimated on admission and day-4 by immunoturbidimetric method.*

Results: *In this study we observed that community acquired pneumonia is more common in middle aged males. CRP levels are increased in 30% and decreased in 70% patients, on day-4 when compared to the levels on day-1. Worsening of CAP occurred in patients among the group in which CRP had raised on day four compared to patients among the group in which CRP had decreased on day 4. Mean duration of stay, need for mechanical ventilatory support, and mortality was seen higher in the group with raise in day -4 CRP levels.*

Conclusion: *This study concludes that if CRP levels raises on day-4 when compared to day-1, the length of stay in hospital, need for mechanical ventilator support and mortality increases. C-reactive protein is an independent predictor of severity in community acquired pneumonia.*

KEYWORDS :

INTRODUCTION

Community acquired pneumonia [CAP] continues to be a common respiratory disorder in developing countries like India. Evidence suggest that in many cases physicians overestimate the severity of community acquired pneumonia, leading to unnecessary admissions, where as others suggests that initial assessment may underestimate the potential severity of CAP. This has lead to the development of a number of severity scores and prediction rules. It is well recognized that elevated concentrations of acute phase reactants correlate with the severity and outcome of sepsis and it has been shown that elevated CRP is an independent predictor of mortality in acutely ill patients. Serial CRP level estimation can be taken as a marker of severity of CAP and as a marker of treatment response.

MATERIALS AND METHODS

Sample size: 50 patients with community acquired pneumonia full-fulling below criteria

Inclusion criteria

All patients presenting to hospital with community acquired pneumonia during the study period and absence of exclusion criteria.

Exclusion criteria:

- Hospital acquired pneumonia
- Active thoracic malignancy
- Conditions likely to cause diagnostic confusion or where chest radiograph changes are equivocal
- Chronic lung disease
- Immunosuppression
- Solid organ malignancy Hematological malignancy
- Chronic liver disease or cirrhosis
- Aspiration pneumonia

Methods

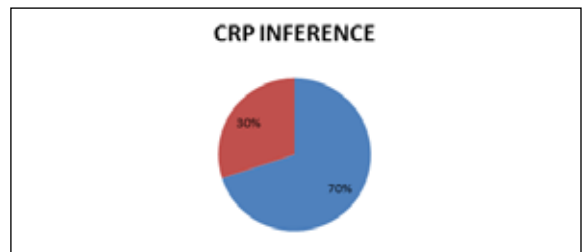
Estimation of CRP in serum by immunoturbidimetric method.

OBSERVATIONS AND RESULTS

Total number of patients included in the study are 50.

Distribution of patients depending on comparison of crp levels on day 1 and day 4 after admission:

CRP LEVELS	NO OF PATIENTS
INCREASED	15
DECREASED	35

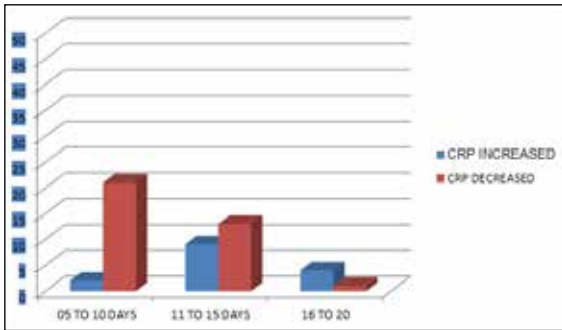


CRP levels were increased in 30(30%) patients on day-4, and decreased in 70(70%) patients, when compared to day -1 CRP levels

Distribution of patients according to duration of hospital stay in relation to CRP values:

DURATION OF STAY IN DAYS	CRP INCREASED	CRP DECREASED
FIVE TO TEN	2	21
ELEVEN TO FIFTEEN	9	13
SIXTEEN TO TWENTY	4	1

NO OF PATIENTS

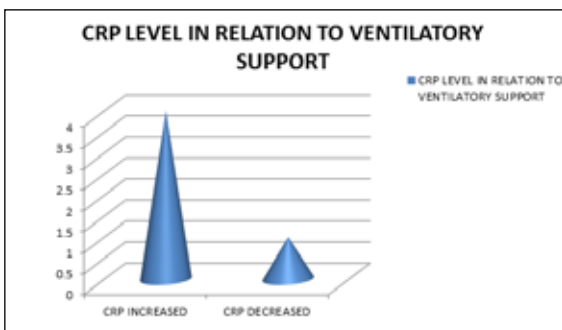


Prolonged hospital stay is commonly associated with increased crp levels

Distribution of patients of according to need for the ventilatory support in both groups:

CRP LEVEL	NO OF PATIENTS
CRP INCREASED GROUP	04
CRP DECREASED GROUP	01

NO OF PATIENTS



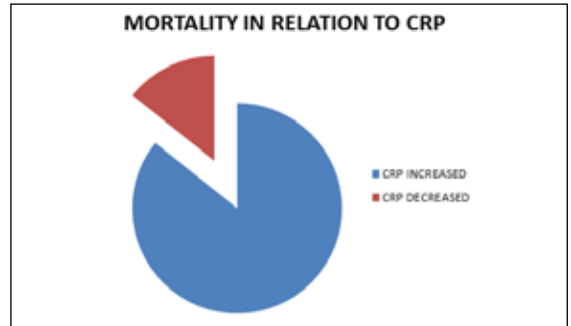
Total number of patients needed ventilator support was 5. 4(80%) were among the group with increased CRP and 1(20%)was among the group with decreased CRP

Distribution of deaths in patients according to CRP levels:

CRP LEVEL	NO OF DEATHS
CRP INCREASED	06
CRP DECREASED	01

Total number of patients died of CAP were 07. 01(15%) were among the group with

decreased CRP levels on day- 4,and 06(85%) were among the group with increased CRP levels on day- 4.



CONCLUSION

C-reactive protein is an independent predictor of severity in community acquired

pneumonia. This study concludes that if CRP levels raises on day-4 when compared to day-1, the length of stay in hospital, need for mechanical ventilator support, and mortality increases.

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