

## SERUM ALKALINE PHOSPHATASE A PROSPECTIVE BIOMARKER FOR ASSESSMENT OF PROGRESS OF FRACTURE HEALING

GULAB KANWAR<sup>1</sup>, MAMTA YADAV<sup>2</sup>, SURENDER KUMAR<sup>3</sup>, SUREKHA KIRAD<sup>4</sup> & NEELAM JAIN<sup>5</sup>

<sup>1, 2, 4, 5</sup>Department of Biochemistry, Govt. Medical College, Kota, Rajasthan, India

<sup>3</sup>Department of Orthopaedics, Govt. Medical College, Kota, Rajasthan, India

### ABSTRACT

In routine clinical practice, bone healing progress is assessed clinico-radiologically. Furthermore, it is difficult to identify the delayed and non-unions early, sometimes even with advanced imaging techniques. Thus increasing the morbidity of the patients. Serum biomarkers, such as alkaline phosphatase (ALP) a marker of bone formation, may be useful in such cases. Serum ALP levels were quantified at regular intervals in 50 adult patients with fresh closed traumatic diaphyseal fractures of long bones. Regular follow up of these patients was done till either bone union or maximum up to the end of 09 month. Depending on the clinico-radiological outcome, all 50 patients were allocated into 03 groups by the end of follow up; Group A (n = 33): normal union; Group B (n = 11): delayed union and group C (n= 06): Non-union. Mean serum ALP levels followed the same pattern in group A and B, reaching a maximum level at post trauma 6th week. But the mean levels of serum ALP at every selected interval was significantly higher in group A than group B till complete union, later on it was higher in group B. In Group C, mean serum ALP level remained within normal limits throughout the follow-up. So, the determination of serum ALP levels during fracture healing could be an additional tool in predicting fractures at risk of delayed / nonunion, aiding the clinician to prefer the early appropriate intervention at appropriate period.

**KEYWORDS:** Alkaline Phosphatase, Biomarker of Fracture Healing