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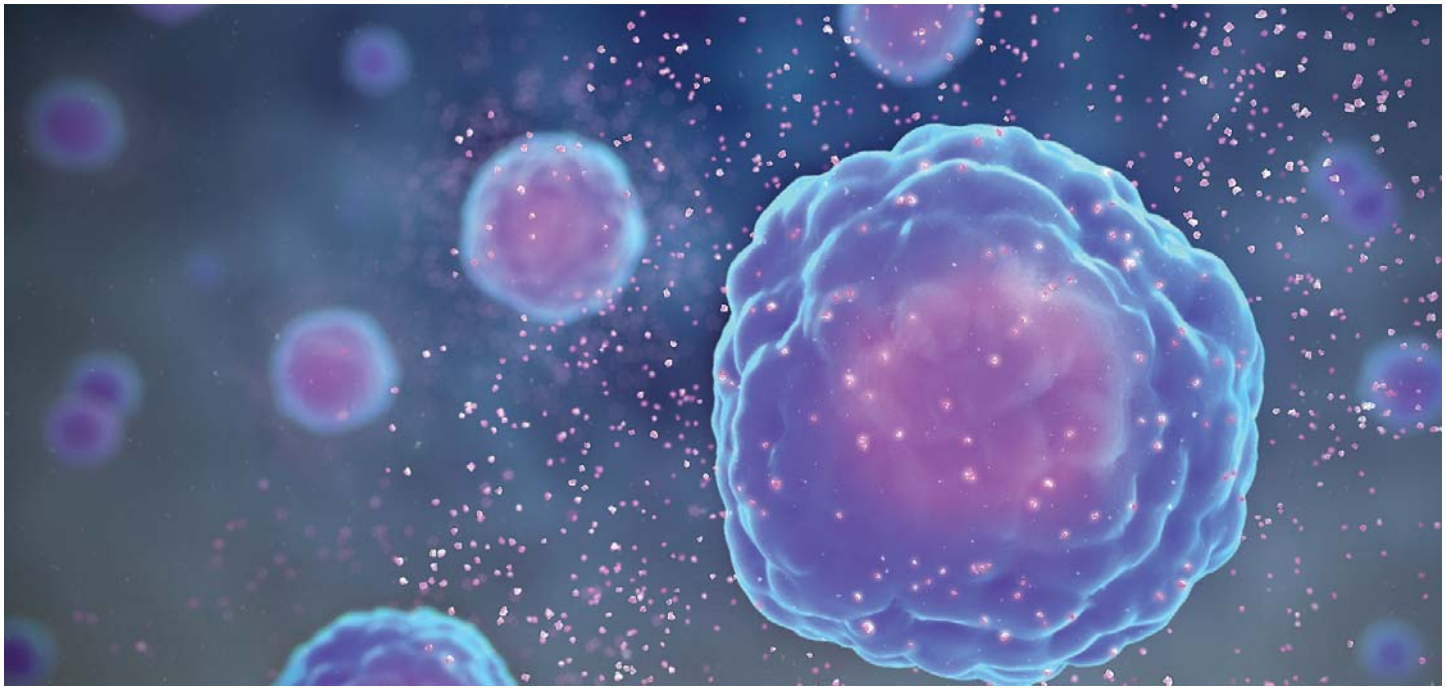

Research Highlight

C-REACTIVE PROTEIN – AN EFFICIENT MARKER OF INFLAMMATION

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C-reactive protein | cytokines | inflammatory reaction | hemodialysis patients | platelet dysfunction | mean platelet volume

C-reactive protein (CRP) is regarded as an acute-phase protein that is synthesized in the liver which belongs to the pentraxin family of proteins. Its synthesis gets regulated by various cytokines, chiefly interleukin 6 (IL-6). It is reported that plasma levels of CRP in a normal person in the absence of active disease are low. However, in the case of any disorder or inflammatory reaction, it can rise up to 1000-fold.

In this regard, an increased plasma concentration of C-reactive protein (CRP) is considered as a sensitive marker of underlying systemic inflammation[1]. Serum CRP concentrations have also been reported to be considerably elevated in hemodialysis patients[2].

Moreover, high level of serum C-reactive protein can strongly predict morbidity and mortality in dialysis patients; particularly it is regarded as an effective predictor of cardiovascular mortality in patients having hemodialysis[3].

Patients with end-stage renal disease suffer from complex hemostatic disorders. Uremic patients show a bleeding diathesis that is chiefly because of abnormalities of primary hemostasis[4]. Moreover, augmented bleeding tendency of chronic renal failure patients indicates platelet dysfunction[4].

Platelet volume is regarded as a sign and possibly a determinant of platelet function as large platelets are more active as compared to normal-sized platelets. ean platelet volume (MPV) is a measure of platelet size, reflects changes in either the level of platelet stimulation or the rate of platelet production[5].

Accordingly, current study was conducted in order to explain whether and how in patients with uremia on hemodialysis the level of C-reactive protein (CRP) affects the mean platelet volume and count. For this purpose, scientists[6] recruited the total 36 patients with an average age of 46±6 years. The median length of the time patients had received hemodialysis was 19 months.

At the end of this experiment, scientists found no major correlation platelet (PLT) count and serum CRP, whereas their association was positive. Therefore, research team concluded that utilizing biocompatible polysulfone membrane during hemodialysis possess a lower complement cascade activation and results indiminution of inflammation during the hemodialysis procedure. Hence, inverse link of MPV with serum CRP, needs to be further verified and detailed investigation should be performed in hemodialysis patients.

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