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**“The Utility of Preoperative Inflammatory Marker Collection in Avoiding Unnecessary Postoperative Infection Workup”**

**BACKGROUND:** Increased surgical volume has resulted in higher levels of postoperative TKA periprosthetic joint infection (PJI) which can cause implant failure, systemic infection, and possible amputation. While postoperatively elevated levels of inflammatory markers, such as C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR), can be indicative of periprosthetic joint infection, these laboratory tests can have inconsistent specificities and sensitivities which can ultimately result in increased healthcare costs and postoperative complications.

**OBJECTIVES:** The objective of this study is to provide evidence for the utility of collecting preoperative patient erythrocyte sedimentation rate and c-reactive protein laboratory values.

**METHODS:** This retrospective study included 337 patients who underwent total knee arthroplasty (TKA) from 2016 through 2022. Patients who underwent contralateral TKA were excluded from this analysis to avoid overlap with routine preoperative TKA laboratory collection for the second TKA. Pre- and postoperative (within 6 months) erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) in patients who underwent TKA were analyzed. Elevated ESR and CRP values were defined using criteria as being above 36 mm/hr and 8.2 mg/L, respectively.

**RESULTS:** Patients were predominantly females (68%) with a racial majority of Caucasians (58%) followed by Black/African American patients (36%). Prior to surgery, 20% of the patients had elevated CRP and 25% had elevated ESR. Within 6 months postoperative, labs were ordered on 41 and 36 patients for CRP and ESR, respectively. Twenty-three patients (56%, 23/41) had elevated CRP values, of which 5 (22%, 5/23) had elevated CRP values prior to surgery with the remaining 18 (78%, 18/23) within normal ranges preoperatively. Twenty-one patients (58%, 21/36) had postoperatively elevated ESR, of which 8 (38%, 8/21) had elevated ESR values prior to surgery with the remaining 13 (62%, 13/21) within normal ranges preoperatively.

**CONCLUSIONS:** Approximately one third of the patients with elevated postoperative labs also had elevated labs prior to surgery, indicating that risk factors other than periprosthetic joint infection might be the cause. By establishing baseline inflammatory marker values of these patients, it is possible to reduce risks of unnecessary infection workup and decrease healthcare costs.

