LETTER TO THE EDITOR

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# *Response to:* Preoperative cardiac evaluation in proximal femur fractures and its effects on the surgical outcome

Dear Editor,

I have read with interest the article entitled ''Preoperative cardiac evaluation in proximal femur fractures and effects on the surgical outcome'' by Kashif Abbas et al. published in the 4th issue of 2012.[1]

The article reports that detailed preoperative cardiac evaluation delays surgery and ambulation although this delay does not increase overall mortality rate. This conclusion should not be mistaken as the preoperative cardiac work-up has no impact on the mortality and unnecessarily delays the surgery.

As the study retrospectively reviews the records of the operated patients, the patients appear to be assigned to their groups based purely on the indication for a cardiologic work-up, rather than a randomized allocation. The patients who underwent further cardiac evaluation most likely had a high comorbidity and would already require such evaluation to delay their surgery. Thus, the real cause of the delay is not the cardiologic evaluation but rather the preexisting comorbidities of the patients which are the indication for such work-up.

In light of this information, the argument that further cardiac evaluation delayed the time from triage to surgery and from surgery to ambulation in their patients with proximal femur fractures does not appear meaningful.

Many studies have shown that high cardiac comorbidity and delayed surgery increases postoperative mortality in hip fracture patients.[2-4] Within this context, the study's second conclusion on similar morbidities of the patients with and without cardiac work-up might be associated with the success of the triage for cardiologic evaluation and management before the surgery.

In my opinion, for the reliability of conclusions of this article, the authors need to respond following questions;

1. How did you assess the association between preoperative cardiac evaluation and surgery timing in these patients although there was no detailed and clear information about forming of Group A and B?
2. How did you evaluate the correlation between the surgery timing and postoperative morbidity and mortality in spite of these non-randomized and non-uniform patient groups with hip fracture?

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# Authors' reply

Dear Editor,

We would like to thank you having allowed us to answer this letter. We are glad that our article has created interest and has afforded the expressed thoughts on the authors of the letter.

The subject of the article appears to be controversial as the eligibility criteria for preoperative cardiological evaluation was not stated clearly. The idea of the study was conceived when undue surgical delays were noticed in patients who require cardiac evaluations. In addition, it was also observed that relatively healthy individuals with good functional class, are also being subjected to additional cardiac investigations. So, before looking at the data, it was assumed that the process of preoperative cardiac evaluation in the form of Echocardiography and Myocardial Perfusion Scan (MPS) delays surgery. Concurrent observation of morbidities and mortalities were necessary to see the overall impact of delays. Recent literature also suggests that delays in surgery increase morbidities and mortalities.[1-3] However, our results were not consistent with literature in this particular regard.

The limitation of retrospective design of the study was also pointed out by our reader. Patients were not assigned to the groups; rather groups were formed based on the investigations they went through for cardiac evaluation.

Further queries of the reader are explained with their questions below;

1. How did you assess the association between preoperative cardiac evaluation and surgery timing in this patients although there was no detailed and cleared information about forming of group A and B?

As our hospital is a tertiary care facility, patient with proximal femur fractures are mostly operated on the same day of presentation. Exception includes patients with certain risk for which optimization is required as decided by anesthetist in charge, after reviewing patient overall condition and laboratory work-up. In our cases, order of preoperative cardiac evaluation is initiated by anesthetist, and on his/her direction cardiology services are involved; and then they decide further about additional need of noninvasive or invasive diagnostics. Once risk stratification is done, they underwent surgical intervention after informed consent is sought.

It is rightly pointed out that the design of our study is retrospective and the drawn conclusion would not be as reliable as it would have been if it was a randomized trial. Retrospective grouping in our patients was done based on type of diagnostic modality needed by cardiology staff, i.e. ECG only (Group A) or additional investigation (Group B). Patients who were directed for additional investigation definitely requires some time for arrangement of appointment and technical staff for the procedure, thus, explaining the delay from triage to surgery.

2. How did you evaluate the correlation between surgery timing and postoperative morbidity and mortality in spite of these non-randomized and non-uniform patient groups with hip fracture?

The idea of conducting this study was to assess if the patients are being investigated according to recent guidelines or not. Before the start of data collection, we went through guidelines thoroughly so that our patients can be grouped into the categories of risk accordingly. Subsequently, their grouping, as done by the cardiology team, was revised. After revised risk categories, patients were assessed for morbidities and mortalities following the surgery and delay. It was evident from the data that ambiguity existed in the selection of patients for additional investigation and criteria was not strictly followed as proposed by AHA guidelines. Number of patients who actually underwent additional cardiac investigation for risk assessment did not need it at all. Thus, all patients comprising group B, were not actually those who really had serious cardiac / systemic comorbidities.

We agree with the opinion of our reader regarding the design of the study. Group B patients still have relatively high proportion of patients with systemic and / or cardiac risk factors, thus may explain relatively high percentage of complications (11%)[4] in the same group.

Sincerely,

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