Observational Versus Angioembolisation in Blunt Splenic Trauma: A Systematic Review

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Abstract: Objective: Non-operative management of blunt splenic trauma have started to overtake the traditional splenectomy in recent years across the grade of splenic injury. The two main non-operative methods are observation and angioembolisation. However, the post management convalescence in these groups are still being investigated. The study attempts to quantify the clinical indicators among the two in particular complications, mortalities, conversions to operative management and duration of inpatient stay. Methodology: A systematic search was done via PUBMED, MEDLINE, and EMBASE. A total of 639 articles identified and subsequently 68 articles were identified post duplicates, full text, and inclusion and exclusion criteria. Main exclusions were non-English articles without English translation, pure observational or angioembolisation articles of which no comparison data could be identified and articles looking into pure hemodynamically unstable patients. Results: 24 non randomized controlled trial, 5 clinical control trial and 39 retrospective studies analyzing a total of 23700 patients with blunt splenic trauma. Discrepancies in data were noted in the group who had observational management versus angioembolisation in particular as data was compared among the classes of splenic rupture, the protocol of management in different centers, availability of angiogram suite, and the study design. Further variability was also noted in the angioembolisation arm as the preference for treatment differs between distal versus proximal splenic artery involvement. Overall the cumulative mortality in both observational and angioembolisation group were similar, 2.78% and 5.97% respectively. The cause of death however is not directly attributed to the management itself but rather patient comorbidities, other associated injuries and conversions to splenectomy leading to post splenectomy complications. The cumulative morbidity among each group appears to be same approximately 12% in observational versus 15% in angioembolisation. However, the type of complications varies with the observational group having higher rates of inpatient stay and intrabdominal hematoma infection and angioembolisation group developing more splenic infarcts and bleeds. There were significant disparity in reporting the actual data on duration of inpatient stay and complications to allow a statistically significant quantitative analysis to be done, 15 articles however are currently being considered. Conclusions: Observational management appears to be much effective in managing lower grade splenic trauma (grade 1 and 2) where else angioembolisation appears to play a bigger role in intermediate grades (grade 3-4) in ensuring splenic function preservation. Care has to be taken however in the angioembolisation group in view of distal splenic infarct group compromising splenic function. The cumulated data of 15 articles are now being considered for a meta-analysis.

Keywords: blunt splenic trauma, conservative, non-operative, angioembolisation

Conference Title: ICSA002 2015: International Conference on Surgery and Anesthesia

Conference Location: Singapore, Singapore

Conference Dates: March 03-04, 2016