

PRISMA-P (Preferred Reporting Items for Systematic review and Meta-Analysis Protocols) 2015 checklist: recommended items to address in a systematic review protocol

Section and topic	Item No	Checklist item
ADMINISTRATIVE INFORMATION		
Title:		The Role of Angioembolization In the Management of Blunt Renal Injuries: A Systematic Review
Identification	1a	The role of Angioembolization (RAE) in Blunt Renal Injuries: protocol for a systematic review
Update	1b	Protocol is not an update of a previous systematic review
Registration	2	Not registered
Authors:		
Contact	3a	<p>Authors <i>Prof. Giovanni Liguori¹, Dr. Giacomo Rebez¹, Prof. Andrea Salonia²</i></p> <p>Authors' affiliations: <i>1 Azienda Sanitaria Universitaria Giuliano-Isontina, Trieste, Italy</i> <i>2 Università Vita Salute San Raffaele, Milan, Italy</i></p> <p>Corresponding Author: Giacomo Rebez Corresponding Author email: giacomorebez@gmail.com Corresponding Author telephone number: 00393338396508 Corresponding Author address: Villa Opicina 1012 Trieste, Italy Corresponding Author ORCID: 0000-0001-7938-1579</p>
Contributions	3b	<p>All authors will contribute to the development of the selection criteria, the risk of bias assessment strategy and data extraction criteria.</p> <p>Design of the work: Giovanni Liguori ; Acquisition, analysis, interpretation of data: Giacomo Rebez; Andrea Salonia; Giovanni Liguori. Drafted the work and substantively revised it: Andrea Salonia. Guarantor of the review: Giovanni Liguori</p>
Amendments	4	Protocol does not represent an amendment of a previously completed or published protocol.
Support:		
Sources	5a	No financial support for the review
Sponsor	5b	No funder and/or sponsor
Role of sponsor or funder	5c	No sponsor

INTRODUCTION

Rationale	6	Renal injuries occur in approximately 10% of all abdominal trauma and the kidney is the third most commonly injured solid organ. Every year, up to 245.000 renal injuries occur worldwide; blunt trauma is responsible for 80–90% of them. Over the last few decades, non-operative management (NOM), including observation, transfusion, bed rest and/or renal angiogram with embolization (RAE), has become increasingly popular, especially for low-grade (I-III) blunt renal injuries. Non-operative management seems to be established for low-grade (I-III) injuries but it is getting increasingly popular even in high grade BRI thanks to angioembolization of active bleedings. The published evidence is unclear about the role of NOM and angioembolization in higher grades (IV and V). Currently there are no validated criteria to identify patients who would benefit from embolization and its use remains controversial.
Objectives	7	This review is aimed to analyse the indications, techniques, efficacy, outcomes and complications rates of angioembolization in blunt renal trauma.

METHODS

Eligibility criteria	8	Articles either published or e-published on angioembolization for BRI between January 2008 and September 2020 will be searched. Study design: All studies evaluating adult patients who underwent RAE will be screened. Following data are required: basic demographics of patients with medical history. indications for angioembolization. angioembolization techniques and/or embolic materials used. the number of either severe life-threatening complications or complications which eventually needed further re-intervention or surgical management of the same kidney.
Information sources	9	Literature search will be performed using MEDLINE, EMBASE, Web of Science and the CENTRAL trials registry of the Cochrane Collaboration. To ensure literature saturation, we will scan the reference lists of included studies or relevant reviews identified through the search. We will also search the authors' personal files to make sure that all relevant material has been captured. Finally, we will circulate a bibliography of the included articles to the systematic review team.
Search strategy	10	Medline, EMBASE, SCOPUS, Web of Science and the CENTRAL trials registry of the Cochrane Collaboration will be searched. The Mesh terms are: "renal" ("kidney"); "trauma" ("injury"); "embolization"; "angiography"; ("Renal Angio Embolization" or "RAE").
Study records:		
Data management	11a	Literature search results will be uploaded to an Internet based software program that facilitates collaboration among reviewers during the study selection process. Data including the first author, publication year, number of patients, age, gender, indications and materials for embolization will be extracted from the selected papers. The outcomes, number of successfully treated patients, severe and life-threatening complications (i.e., re-bleeding, re-do RAE procedures, and contrast medium-induced renal failure) and the need for further surgical treatment will be included.
Selection process	11b	The review authors will independently screen the titles and abstracts yielded by the search against the inclusion criteria. We

		will obtain full reports for all titles that appear to meet the inclusion criteria or where there is any uncertainty. Review author pairs will then screen the full text reports and decide whether these meet the inclusion criteria. We will seek additional information from study authors where necessary to resolve questions about eligibility. We will resolve disagreement through discussion. We will record the reasons for excluding studies. Neither of the review authors will be blind to the journal titles or to the study authors or institution.
Data collection process	11c	Data abstracted will include demographic information, methodology, intervention details, and all reported patient-important outcomes.
Data items	12	We will extract the first author, publication year, number of patients, age, gender, indications and materials for embolization, outcomes, number of successfully treated patients, severe and life-threatening complications i.e., re-bleeding, re-do procedures, and renal failure.
Outcomes and prioritization	13	The primary outcome will be the number of patients who responded to the angioembolization avoiding surgery both in low grade and in high grade renal injuries.
Risk of bias in individual studies	14	The risk of bias will be minimized by the different revision of papers performed by 3 authors (GR, GL, AS).
Data synthesis	15a	If studies are sufficiently homogeneous in terms of design and comparator, we will conduct meta-analyses using a random-effects mode.
	15b	Dichotomous data (success of angioembolization or surgical intervention) will be determined by using risk ratio (RR) with 95% confidence interval (CI).
	15c	No additional analyses are proposed.
	15d	
Meta-bias(es)	16	We will evaluate whether selective reporting of outcomes is present (outcome reporting bias).
Confidence in cumulative evidence	17	The quality of evidence for all outcomes will be judged using the Grading of Recommendations Assessment, Development and Evaluation working group methodology. The quality of evidence will be assessed across the domains of risk of bias, consistency, directness, precision and publication bias.

From: Shamseer L, Moher D, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart L, PRISMA-P Group. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. BMJ. 2015 Jan 2;349(jan02 1):g7647.