This supplementary appendix provides:

1. PRISMA checklist
2. PROSPERO protocol registration.
3. Search equation via PubMed, EMBASE, and Cochrane library
4. Quality assessment of the included studies (**ROBINS-I for non-randomized study)**
5. Quality assessment of the GRADE results.
6. Flow chart of study selection for the meta-analysis
7. Quality assessment of the included studies **(RoB 1.0 for randomized control study)**
8. Summary of contextual factor data
9. Subgroup analysis about different follow-up time

1. PRISMA checklist

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	1
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	3-4
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	5
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	5-6
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	6
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	6-7
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	6-7
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	7
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	8
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	7-8
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	7-8
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	8-9
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	9-10
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	9-10
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	9-10
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	9-10
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	9-10
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	9-10
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	9-10

Section and Topic	Item #	Checklist item	Location where item is reported
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	9-10
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	9-10
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	11, appendix 3
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	11
Study characteristics	17	Cite each included study and present its characteristics.	Table 1, 2
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	12-13
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	13, Figure 2
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	13
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	13, Figure 2
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	12
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	12
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	12
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	14
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	16
	23b	Discuss any limitations of the evidence included in the review.	18
	23c	Discuss any limitations of the review processes used.	18
	23d	Discuss implications of the results for practice, policy, and future research.	18
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	6
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	6
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	6
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	
Competing interests	26	Declare any competing interests of review authors.	

Section and Topic	Item #	Checklist item	Location where item is reported
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	6

2. PROSPERO protocol registration

1. * Review title.

Outcome after AKI intervention by nephrologists

2. Original language title.

急性腎衰竭病人在腎臟科介入之差異

3. * Anticipated or actual start date.

Give the date by which the review is expected to be completed. 30/01/2021

4. * Anticipated completion date.

Give the date by which the review is expected to be completed. 30/01/2021

5. * Stage of review at time of this submission.

The review has not yet started: No

Review stage	Started	Completed
Preliminary searches	Yes	No
Piloting of the study selection process	Yes	No
Formal screening of search results against eligibility criteria	No	No
Data extraction	No	No
Risk of bias (quality) assessment	No	No
Data analysis	No	No

6. * Named contact.

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11. * Review team members and their organisational affiliations.

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Vin Cent Wu. Division of Nephrology and Internal Medicine, National Taiwan University Hospital

12. * Funding sources/sponsors.

No funding sources or sponsors

I

Grant number(s)

13. * Conflicts of interest.

None

14. Collaborators.

15. * Review question.

The prognosis about AKI after intervention by nephrologist

16. * Searches.

PubMed, cochrane, EMBase, Scopus

17. URL to search strategy.

Do not make this file publicly available until the review is complete

18. * Condition or domain being studied.

acute kidney injury, nephrologist intervention

19. * Participants/population.

Inclusion: the patient had diagnosed with acute kidney injury during admission

20. * Intervention(s), exposure(s).

The patient diagnosed with acute kidney injury during admission, are not always consult nephrologist or refer to nephrologist care. Even the patient received temporary dialysis therapy during admission, more than half of the patient is not follow up at nephologist outpatient department after discharge. We will analyze the outcome between nephrologist intervention (contain consultation, referral, or follow up at nephrologist outpatient department)

21. * Comparator(s)/control.

patient diagnosed with acute kidney injury and didn't receive nephrologist care or follow up

22. * Types of study to be included.

We will include RCT, cohort study for the assessment

23. Context.

Research without control group will be excluded (didn't refer or consult nephrologist or follow up at nephrologist)

24. * Main outcome(s).

mortality rate about discharge with the dialysis-independent patient

*** Measures of effect**

odds ratios (95% CI intervals)

25. * Additional outcome(s).

End-stage renal disease rate after discharge follow up

* Measures of effect

odds ratios (95% CI intervals)

26. * Data extraction (selection and coding).

Study selection: data include nephrologist intervention and non-intervention Data extraction: study design and methodology, baseline characteristics, numbers of mortality will be record in excel spreadsheet. We will write email to author if there was missing data noted.

27. * Risk of bias (quality) assessment.

We will use Newcastle-Ottawa Scale for the observation study assessed. 2 reviewers will be involved in the quality assessment. If there was disagreement between reviewers judgments, the third reviewer will judge it

28. * Strategy for data synthesis.

1. We want to include at least 5 study in this review
2. the odds ratio for survival rate after AKI intervention or not by the nephrologist
3. combined different study with the fix or random effect model in meta-analysis

29. * Analysis of subgroups or subsets.

1. Subgroup: different timing of nephrologist intervention, include consult when AKI diagnosis, refer to the nephrologist, post-AKI care follow up at nephrologist outpatient department
2. We will include RCT, observational cohort study, and case-control study
3. meta-regression about different comorbidity, age, sex

30. * Type and method of review.

Cost effectiveness
No
Diagnostic
No
Epidemiologic
No
Individual patient data (IPD) meta-analysis
No
Intervention
No
Living systematic review
No
Meta-analysis
Yes
Methodology
No
Narrative synthesis
No
Network meta-analysis
No

Pre-clinical
No
Prevention
No
Prognostic
No
Prospective meta-analysis (PMA)
No
Review of reviews
No
Service delivery
No
Synthesis of qualitative studies
No
Systematic review
Yes
Other No

Health area of the review

Alcohol/substance misuse/abuse	No
Blood and immune system	No
Cancer	No
Cardiovascular	No
Care of the elderly	No
Child health	No
Complementary therapies	No
COVID-19	No
Crime and justice	No
Dental	No
Digestive system	No
Ear, nose and throat	No
Education	No
Endocrine and metabolic disorders	No
Eye disorders	No
General interest	No
Genetics	No
Health inequalities/health equity	No
Infections and infestations	No
International development	No
Mental health and behavioural conditions	No
Musculoskeletal	No
Neurological	No
Nursing	No
Obstetrics and gynaecology	No
Oral health	No
Palliative care	No
Perioperative care	No
Physiotherapy	No
Pregnancy and childbirth	No

Public health (including social determinants of health)	Yes
Rehabilitation	No
Respiratory disorders	No
Service delivery	No
Skin disorders	No
Social care	No
Surgery	No
Tropical Medicine	No
Urological	No
Wounds, injuries and accidents	No
Violence and abuse	No

31. Language.

English

There is not an English language summary

32. * Country.

Taiwan

33. **Other registration details.**

34. Reference and/or URL for published protocol.

No I do not make this file publicly available until the review is complete

35. **Dissemination plans.**

Do you intend to publish the review on completion?

Yes

36. Keywords.

meta-analysis; acute kidney injury; post-discharge follow up; consult; referred; survival

37. **Details of any existing review of the same topic by the same authors.**

38. * Current review status.

Review Ongoing

39. **Any additional information.**

40. Details of final report/publication(s) or preprints if available.

3. Search equation via PubMed, EMBASE, MEDLINE, and Cochrane library

Appendix.
Search strategies for the different databases ran on Dec 28, 2020.

PubMed Search Query

#1. (("acute kidney injury"[MeSH Terms] OR ("acute"[All Fields] AND "kidney"[All Fields] AND "injury"[All Fields]) OR "acute kidney injury"[All Fields] OR ("acute kidney injury"[MeSH Terms] OR ("acute"[All Fields] AND "kidney"[All Fields] AND "injury"[All Fields]) OR "acute kidney injury"[All Fields] OR ("acute"[All Fields] AND "renal"[All Fields] AND "failure"[All Fields]) OR "acute renal failure"[All Fields]) OR (("acute"[All Fields] OR "acutely"[All Fields] OR "acutes"[All Fields]) AND ("kidney diseases"[MeSH Terms] OR ("kidney"[All Fields] AND "diseases"[All Fields]) OR "kidney diseases"[All Fields] OR ("kidney"[All Fields] AND "disease"[All Fields]) OR "kidney disease"[All Fields])) OR (("acute"[All Fields] OR "acutely"[All Fields] OR "acutes"[All Fields]) AND "kidney diseases"[MeSH Terms])) AND ((("nephrology"[MeSH Terms] OR "nephrology"[All Fields] OR "nephrology s"[All Fields]) AND ("referral and consultation"[MeSH Terms] OR ("referral"[All Fields] AND "consultation"[All Fields]) OR "referral and consultation"[All Fields] OR "referral"[All Fields] OR "referrals"[All Fields] OR "referrer"[All Fields] OR "referrers"[All Fields])) OR (("nephrology"[MeSH Terms] OR "nephrology"[All Fields] OR "nephrology s"[All Fields]) AND ("consultancies"[All Fields] OR "consultancy"[All Fields] OR "consultant s"[All Fields] OR "consultants"[MeSH Terms] OR "consultants"[All Fields] OR "consultant"[All Fields] OR "consultative"[All Fields] OR "consulter"[All Fields] OR "consulters"[All Fields] OR "referral and consultation"[MeSH Terms] OR ("referral"[All Fields] AND "consultation"[All Fields]) OR "referral and consultation"[All Fields] OR "consult"[All Fields] OR "consultation"[All Fields] OR "consultations"[All Fields] OR "consulted"[All Fields] OR "consulting"[All Fields] OR "consults"[All Fields])) OR ((("nephrology"[MeSH Terms] OR "nephrology"[All Fields] OR "nephrology s"[All Fields]) AND ("aftercare"[MeSH Terms] OR "aftercare"[All Fields] OR ("care"[All Fields] AND "after"[All Fields]) OR "care after"[All Fields])) AND "patient discharge"[MeSH Terms])) AND ("outcome"[All Fields] OR "outcomes"[All Fields] OR ("renal insufficiency, chronic"[MeSH Terms] OR ("renal"[All Fields] AND "insufficiency"[All Fields] AND "chronic"[All Fields]) OR "chronic renal insufficiency"[All Fields] OR ("chronic"[All Fields] AND "kidney"[All Fields] AND "disease"[All Fields]) OR "chronic kidney disease"[All Fields]) OR ("dialysance"[All Fields] OR "dialysances"[All Fields] OR "dialysation"[All Fields] OR "dialysator"[All Fields] OR "dialysators"[All Fields] OR "dialyse"[All Fields] OR "dialysed"[All Fields] OR "dialyser"[All Fields] OR "dialysers"[All Fields] OR "dialysing"[All Fields] OR "dialysis solutions"[Pharmacological Action] OR "dialysis solutions"[MeSH Terms] OR ("dialysis"[All Fields] AND "solutions"[All Fields]) OR "dialysis solutions"[All Fields] OR "dialysate"[All Fields] OR "dialysates"[All Fields] OR "dialyzate"[All Fields] OR "dialyzates"[All Fields] OR "dialysis"[MeSH Terms] OR "dialysis"[All Fields] OR "dialyses"[All Fields] OR "dialyzability"[All Fields] OR "dialyzable"[All Fields] OR "dialyzation"[All Fields] OR "dialyze"[All Fields] OR "dialyzed"[All Fields] OR "dialyzer"[All Fields] OR "dialyzer s"[All Fields] OR "dialyzers"[All Fields] OR "dialyzing"[All Fields] OR "renal dialysis"[MeSH Terms] OR ("renal"[All Fields] AND "dialysis"[All Fields]) OR "renal dialysis"[All Fields]) OR "mortality"[MeSH Terms])) AND (humans[Filter]) (384)

EMBASE Search Query

#1 ('acute kidney injury':ti,ab,kw OR 'acute renal failure':ti,ab,kw OR 'acute kidney disease':ti,ab,kw) AND ('nephrology referral':ti,ab,kw OR 'nephrology consultation':ti,ab,kw OR 'nephrologist Care after discharge':ti,ab,kw) AND (outcome:ti,ab,kw OR 'chronic kidney disease':ti,ab,kw OR dialysis:ti,ab,kw OR mortality:ti,ab,kw) (99)

Medline (EBSCO) Search Query

#1 (Acute kidney injury OR acute renal failure OR acute kidney disease OR acute kidney disease) AND (nephrology referral OR Nephrology consultation OR nephrologist Care after discharge) AND (outcome OR chronic kidney disease OR dialysis OR mortality) (10530)

Expanders - Apply related words; Also search within the full text of the articles; Apply equivalent subjects
Narrow by Language: - English
Search modes - Find all my search terms

Cochrane Library

#1 Acute kidney injury OR acute renal failure OR acute kidney disease OR acute kidney disease in Title Abstract Keyword AND nephrology referral OR Nephrology consultation OR nephrologist Care after discharge in Title Abstract Keyword AND outcome OR chronic kidney disease OR dialysis OR mortality in Title Abstract Keyword - (Word variations have been searched)
(31)

4. Quality assessment of the included studies (ROBINS-I tool for non-randomized studies)

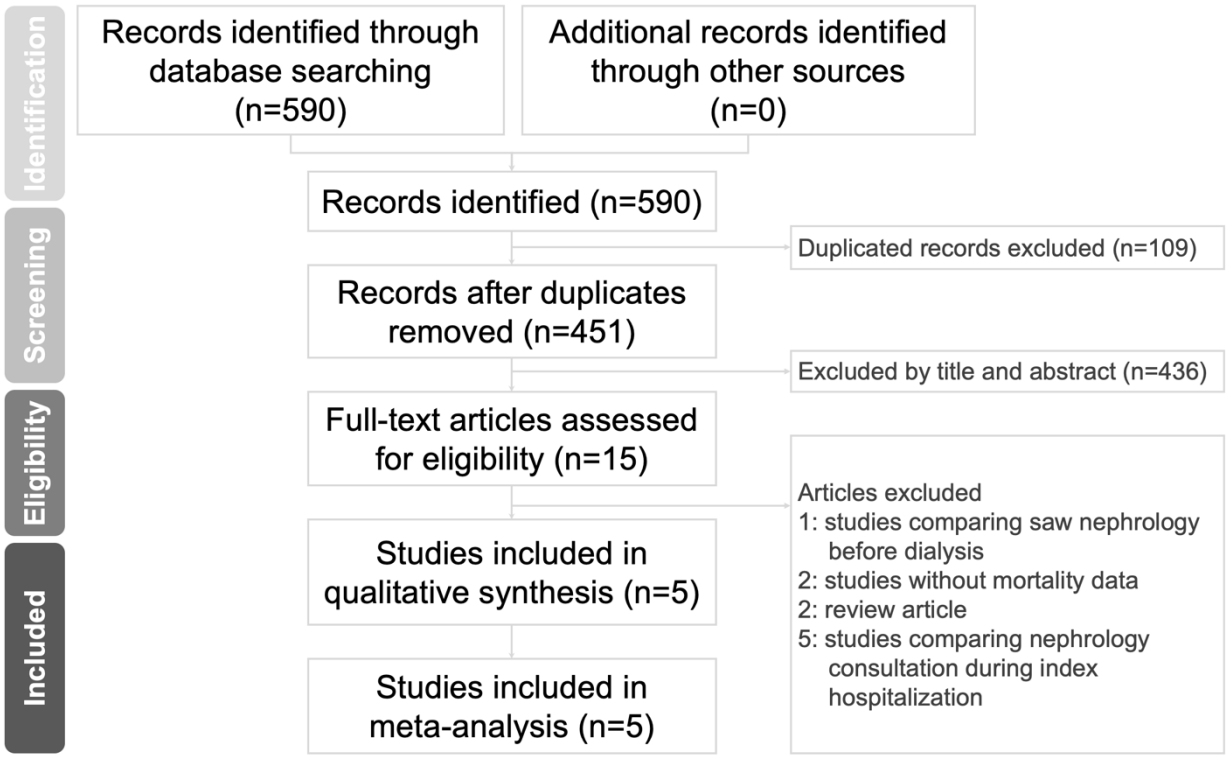
Study		Pre-intervention		At intervention	Post-intervention				Overall risk of bias
First author	year	Bias due to confounding	Bias in selection of participants into the study	Bias in classification of interventions	Bias due to deviations from intended interventions	Bias due to missing data	Bias in measurement of outcomes	Bias in selection of the reported result	Low / moderate / serious / critical
I.H. KHAN	1997	NI	moderate	low	low	NI	low	low	moderate
Ziv Harel	2013	moderate	moderate	low	low	low	low	low	moderate
Divya	2017	moderate	moderate	low	low	low	low	low	moderate
Vin-Cent Wu	2020	moderate	moderate	low	low	low	low	low	moderate

5. GRADE evidence of the included studies

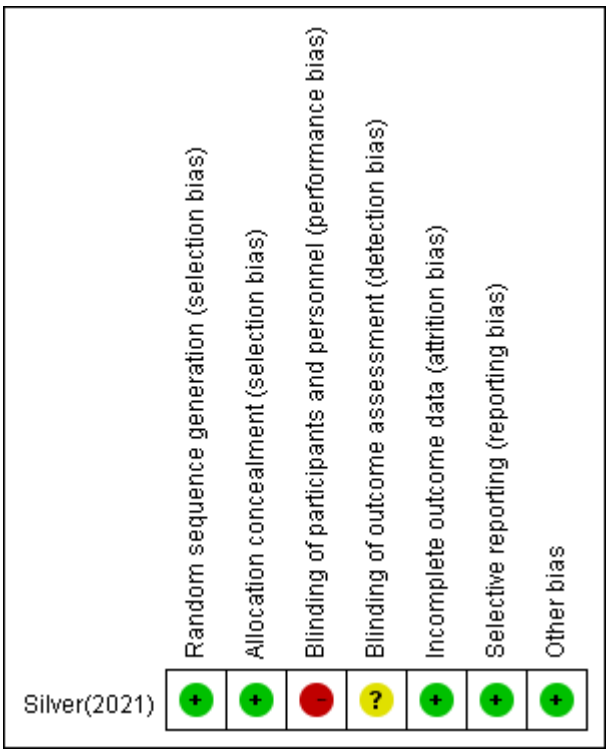
GRADE evidence profile of outcome after AKI followed up by nephrologist											
Quality assessment						Summary of findings					
						Study event rates			Absolute effects		
No of participants (studies), follow-up period	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Control	Early intervention	Relative risk (95% CI)	Risk with control	Risk difference (95% CI)	Quality of evidence
All-cause mortality											
15541(5), discharge to 2 years	Serious limitation, due to unclear of follow up and lack of blinding	Serious limitation, due to high heterogenicity	No serious limitation	No serious limitation	Undetected	2913/8395 (34.7%)	2431/7146 (34.0%)	Odds ratio 0.768 (0.616 to 0.956)	347 per 1000 *	81 fewer (133 fewer to 15 fewer)	⊕⊕◯◯ Low, due to risk of bias

* Baseline risk estimate for all-cause mortality from control arms of the five trials we identified to best represent our target population with 2913 events in 8395 participants (347 per 1000)

6. Flow chart of study selection for the meta-analysis



7. Quality assessment of the included studies (RoB 1.0 for randomized control study)



Entry	Judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Quote: "An independent statistician generated sequential, opaque, sealed envelopes that were unsealed after enrollment and indicated treatment allocation" Comment: Probably done
Allocation concealment (selection bias)	Low risk	Quote: "An independent statistician generated sequential, opaque, sealed envelopes that were unsealed after enrollment and indicated treatment allocation" Comment: Probably done.
Blinding of participants and personnel (performance bias)	High risk	Quote: "open-label, parallel-arm, randomized controlled trial at four academic hospitals in Toronto, Canada" Comment: Probably not done.
Blinding of outcome assessment (detection bias) (patient-reported outcomes)	High risk	Quote: "As part of the 2-year planned vanguard phase trial, feasibility outcomes included the proportion of eligible patients enrolled, the proportion of randomized patients seen by a nephrologist, and the proportion of patients followed to 1 year." Comment: Probably not done.
Blinding of outcome assessment (detection bias) (Mortality)	unclear	Quote: "This composite end point has been endorsed by the National Institute of Diabetes and Digestive and Kidney Diseases Clinical Trials Workgroup"
Incomplete outcome data addressed (attrition bias) (Short-term outcomes (2-6 weeks))	Low risk	Patients who were lost to follow-up could contribute events (e.g., CKD) until the last follow-up date, and were assumed to be alive at 1 year Comment: Probably done

Incomplete outcome data addressed (attrition bias) (Longer-term outcomes (>6 weeks))	Low risk	Patients who were lost to follow-up could contribute events (e.g., CKD) until the last follow-up date, and were assumed to be alive at 1 year Comment: Probably done
Selective reporting (reporting bias)	Low risk	Clinical Trial registry name and registration number: Nephrologist Follow-up versus Usual Care after an Acute Kidney Injury Hospitalization (FUSION), NCT02483039
Other bias		

8. Summary of contextual factor data.

In our study, 4 retrospective cohort study and 1 randomized control study with 15541 participants were included in this meta-analysis. In Khan et al. (1997), 310 cases were included and nephrologist Care had lower all-cause mortality (51.4% vs 74.2%). Harel et al. (2013) included 3877 patients with AKI who received acute dialysis and survived for at least 90 days after hospital discharge without further dialysis or re-hospitalization, and nephrologist Care had lower all-cause mortality (15.5% vs 18.9%). In Karsanji et al. (2017), which included 2076 patients with stage 3 AKI, and nephrologist Care had lower all-cause mortality (7% vs 7.9%). Wu et al. (2020) included patients with acute dialysis during index hospitalization and follow up after discharge, nephrologist Care had lower all-cause mortality (40.6% vs 44.5%). In Silver et al. (2021), it included 71 patients with stage 2-3 AKI, and AKI follow up clinic group had higher mortality rate(8.8% vs. 2.7%).

Most of the above studies included patients with AKI during index hospitalization and survival after discharge had lower mortality rates in the nephrologist Care group. Our meta-analysis also revealed the significant value of improving the mortality rate in nephrologist Care. But there are several limitations noted in this study. First, high variation of mortality rate between different studies and no data about renal function after discharge in each study. Second, even there was no obvious risk of bias in each study, but high heterogenicity between studies was noted. Third, although there was no asymmetrical forest plot, there are only 5 studies in our study. Fourth, there was no enough data about the rate of end-stage renal disease after discharge.

In conclusion, nephrologist care in patient discharge with AKI during hospitalization look has to benefit in all-cause mortality. But does it improve end-stage renal disease was uncertain.

9. Subgroup analysis about different follow-up time

Model	Group by follow up time	Study name	Odds ratio	Lower limit	Upper limit
	<2 years	I.H. KHAN (1997)	0.369	0.213	0.640
	<2 years	Ziv Harel(2013)	0.789	0.637	0.977
	<2 years	SA Silver (2021)	3.484	0.345	35.223
Fixed	<2 years	Pooled	0.722	0.592	0.881
	>2 years	Divya(2017)	0.866	0.587	1.278
	>2 years	Vin-Cent Wu (2020)	0.851	0.788	0.919
Fixed	>2 years	Pooled	0.852	0.790	0.918