Supplementary Materials

Table S1. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	1
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	4
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	4
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	N/A
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	5
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	5
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	Table S2
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	5
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	5

Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	Table S3
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	6
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	5
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	6
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	6
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	6
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	6 Figure 1
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	6-7 Table 1 Table 2
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	7
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	9 Figure 2
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	Figure 2
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	7-8
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	9
DISCUSSION			

Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	10
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	12
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	10-11
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	12

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For more information, visit: **www.prisma-statement.org**.

Table S2. Search strategy used to identify relevant articles

Database	Search Strategy
MEDLINE	1. Polycystic Kidney Diseases/ or Polycystic Kidney, Autosomal Dominant/ 2. (((polycystic or "type 2" or "type II" or "type 1" or "type I" or "autosomal dominant" or pkd) adj3 (kidney* or renal)) or adpkd).mp. 3. 1 or 2 4. exp Urolithiasis/ 5. (nephrolith* or urolith* or ureterolith* or lithias* or urolyt or urolyts or ((kidney* or renal or urin* or ureter*) adj3 (calculus or calculi or stone*))).mp. 6. 4 or 5 7. 3 and 6
EMBASE	1. kidney polycystic disease/ 2. (((polycystic or "type 2" or "type II" or "type 1" or "type I" or "autosomal dominant" or pkd) adj3 (kidney* or renal)) or adpkd).mp. 3. 1 or 2 4. urolithiasis/ or calcium oxalate stone/ or calcium stone/ or nephrolithiasis/ or staghorn stone/ or uric acid stone/ or ureter stone/ 5. (nephrolith* or urolith* or ureterolith* or lithias* or urolyt or urolyts or ((kidney* or renal or urin* or ureter*) adj3 (calculus or calculi or stone*))).mp. 6. 4 or 5 **7.** 3 and 6
CINAHL	1. (MH "Kidney, Cystic") OR (MH "Polycystic Kidney, Autosomal Dominant") 2. (((polycystic or "type 2" or "type II" or "type 1" or "type I" or "autosomal dominant" or pkd) N3 (kidney* or renal)) or adpkd) 3. S1 OR S2 4. (MH "Urolithiasis+") 5. (nephrolith* or urolith* or ureterolith* or lithias* or urolyt or urolyts or ((kidney* or renal or urin* or ureter*) N3 (calculus or calculi or stone*))) 6. S4 OR S5 7. S3 AND S6
Web of Science **&** **BIOSIS Preview**	(((((((((polycystic OR "type 2") OR "type II") OR "type 1") OR "type I") OR "autosomal dominant") OR pkd) NEAR (kidney* OR renal)) OR adpkd) AND (((((((((nephrolith* OR urolith*) OR ureterolith*) OR lithias*) OR uralyt) OR uroliths) OR ((((kidney* OR renal) OR urin*) OR ureter*) NEAR ((calculus OR calculi) OR stone*))) OR ((((ESWL OR eswls) OR SWL) OR lithotrips*) OR litholapax*)) OR ((((ureteroscop* OR ureterorenoscop*) OR RIRS) OR retrograde intrarenal surgery) OR FURS)) OR ((PCNL OR mpnl) OR (percutaneous NEAR (nephrostom* OR nephrolithotom*)))))

Table S3. Data abstraction form

Study Characteristics

ID	Author (Year) *Country*	Study Design	No. of Centers	Inclusion Criteria	Recruitment Period	Mean (SD) Follow-up	ADPKD sample size	ADPKD Case Definition
1								

ADPKD- imaging modality used for diagnosis	Control population type	Control Sample Size	Quality Score	Stone Type	Setting

Patient Characteristics

ID	Author (Year) *Country*	Mean Age (standard deviation) (years)	No. of Male (%)	No. of Patients on Dialysis (%)	No. of Transplant Recipient (%)	No. of patients who had ESRD (%)	No. of Hypertensive Patients (%)	No. of Patients with UTI (%)	Serum Creatinine (µmol/L)
1									

Prevalence and Characteristics of Stones

ID	Author (Year) *Country*	No. of unique patients with stones	Prevalence of stones (%)	Stone Definition	Modality used to diagnose stone	Symptoms	Location
1							

Composition	No. of patients that underwent stone intervention	% of patients with stones that underwent intervention	% of ADPKD patients who underwent intervention

Table S4. Modified Downs and Black Checklist for observational studies

	Description of Criteria	Probable Answers
1	**Is the hypothesis/aim/objective of the study clearly described?**	1-Yes; 0-No
2	**Are the main outcomes to be measured clearly described in the Introduction or Methods section?**	1-Yes; 0-No
3	**Are the inclusion and exclusion criteria of the populations clearly described?**	1-Yes; 0-No
4	**Is the case definition for ADPKD clearly described?**	1-Yes; 0-No
5	**Is the ADPKD case definition valid or reliable?** *After 2009, Pei criteria; between 1994 and 2009 Ravine criteria; before 1994 other definitions that sounds reasonable*	1-Yes; 0-No
6	**Is the distribution of age, sex, and baseline kidney function in each group of subjects to be compared clearly described?**	1-Yes; 0-No
7	**Are the main findings of the study clearly described?** *Simple data (including denominators and numerators) should be reported for all major findings so that the reader can check the major analyses and conclusions.*	1-Yes; 0-No
8	**Does the study provide estimate of the random variability in the data for the main outcome?** *In non-normally distributed data, the inter-quartile range of results should be reported. In normally distributed data the standard error, standard deviation, or confidence intervals should be reported. If the distribution of the data is not described, it must be assumed that the estimate used were appropriate and the question should be answered yes.*	1-Yes; 0-No
9	**Have the characteristics of patients lost to follow-up been described?** *This should be answered YES where there were no losses to follow-up or where losses to follow-up were so small that findings would be unaffected by their inclusion. This should be answered no where a study does not report the number of patients lost to follow-up. If LOF <15% then NO.*	1-Yes; 0-No; 0-N/A
10	**Have actual probability values been reported (e.g. 0.035 rather than <0.05) for the main outcomes except where the probability value is less than 0.001?**	1-Yes; 0-No; 0-N/A
11	**Were the subjects asked to participate in the study representative of the entire population from which they were recruited?**	1-Yes; 0-No; 0-UTD
12	**Were those subjects who were prepared to participate representative of the entire population from which they were recruited?** *The proportion of those asked who agreed should be stated. Validation that the sample was representative would include demonstrating that the distribution of the main confounding factors was the same in the study sample and the source population.*	1-Yes; 0-No; 0-UTD
13	**Was the prevalence of stone estimated at a place or facility that is representative of where most of the source population would attend?** *If recruited from tertiary care center, then NO. If recruited from outpatient clinic, then YES.*	1-Yes; 0-No; 0-UTD
14	**There are no unplanned retrospective analyses performed (i.e. data dredging)?** *Any analyses that had not been planned at the outset of the study should be clearly indicated. If no retrospective unplanned subgroup analyses were reported, then answer yes. If authors report any outcomes/clinical characteristics that were not*	1-Yes; 0-No; 0-UTD

	explicitly referenced in the intro/method section, then my answer to this question is NO; If methods section too brief/not detailed enough, then UTD)	
15	**In cohort studies, do the analyses adjust for different length of follow-up of patients, or in case-control studies is the time period between the intervention and outcome the same for cases and controls?** *Where follow-up was the same for all study patients, the answer should be yes. If different lengths of follow-up were adjusted for by, for example, survival analysis the answer should be yes. Studies where differences in follow-up are ignored should be answered no.*	1-Yes; 0-No; 0-UTD; 0-N/A
16	**Were the statistical tests used to assess the main outcome appropriate?** *The statistical techniques used must be appropriate to the data. For example, non-parametric methods should be used for small sample sizes. Where little statistical analysis has been undertaken but where there is no evidence of bias, the question should be answered yes. If the distribution of data (normal or not) is not described it must be assumed that the estimates used were appropriate and the question should be answered yes.*	1-Yes; 0-No; 0-UTD; 0-N/A
17	**Reported a case definition for stone?**	1-Yes; 0-No; 0-UTD
18	**Was the case definition for stones accurate and reliable**? *For studies where the outcome measures are clearly described, the question should be answered yes. For studies which refer to other work or that demonstrate the outcome measure are accurate, the question should be answered as yes. If authors reference a validation study for their stone definition, or comment on the sensitivity/specificity of the method they used to identify stone, then answer yes*	1-Yes; 0-No; 0-UTD
19	**Were the ADPKD population and controls recruited from the same population?**	1-Yes; 0-No; 0-UTD; 0-N/A
20	**Were the ADPKD population and the controls recruited from the same time period?** *For a study which does not specify the time period over which patient were recruited, the question should be answered as unable to determine.*	1-Yes; 0-No; 0-UTD; 0-N/A
21	**Was there adequate adjustment for confounding in the analyses from which the main finding was drawn?** *Should be answered no: the distribution of known confounders in the different treatment group was not described; or the distribution of known confounders differed between the two groups but was not taken into account in the analyse; if effect of the main confounders was not investigated or confounding was demonstrated but no adjustment was made in the final analyses the questions should be answered as no.*	1-Yes; 0-No; 0-UTD; 0-N/A
22	**Were losses of patients to follow-up taken into account?** *If the number of patients lost to follow-up are not reported, the question should be answered as unable to determine. If the proportion lost to follow-up was too small to affect the main findings, the question should be answered yes.*	1-Yes; 0-No; 0-UTD; 0-N/A

Abbreviations: not applicable, N/A; unable to determine, UTD

Table S5. Ravine ultrasonographic criteria for diagnosing autosomal dominant polycystic kidney disease

Age	Positive Family History	Negative Family history
< 30 years	2 cysts bilaterally or unilaterally	5 cysts bilaterally
30 to 60 years	4 cysts bilaterally	5 cysts bilaterally
> 60 years	8 cysts bilaterally	8 cysts bilaterally

Table S6. Pei ultrasonographic criteria for diagnosing autosomal dominant polycystic kidney disease (ADPKD)

Age (years)	Diagnostic Criteria
15 to 39	At least 3 cysts (unilateral or bilateral)
40 to 59	2 cysts/kidney
$\geq$ 60	4 or more cysts/kidney

*Note: Fewer than 2 cysts in individuals $\geq$ 40 years old and are at risk of ADPKD is sufficient to rule out the disease.