

Supplementary Materials

S1 PRISMA checklist

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	Title
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	Abstract
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	paragraphs 1-12
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	paragraph 13
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Methods section 2.2
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.	Methods section 2.1
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Methods section 2.1
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.	Methods section 2.2
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.	Methods section 2.3
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	Methods section 2.3-5

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		each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	
	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.	Methods section 2.3
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.	Methods section 2.4
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.	Methods section 2.5
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)).	Methods section 2.2 & 2.5
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	Methods section 2.5
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	Methods section 2.5
	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.	Methods section 2.5
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	Methods section 2.5
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	Methods section 2.5

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Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	Methods section 2.5
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	Not applicant
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.	Results section 3.1
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	Results section 3.1
Study characteristics	17	Cite each included study and present its characteristics.	Results section 3.1 & table 1
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	Results section 3.2 Figure 2 and Table 2
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.	Results section 3.3 and Figures 3-7
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	Results section 3.3
	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.	Results section 3.3 and Figures 3-7
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	Results section 3.3

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	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	Results section 3.5
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	Results section 3.4
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	Not applicant
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	Discussion section paragraphs 1-5
	23b	Discuss any limitations of the evidence included in the review.	Discussion section paragraph 6
	23c	Discuss any limitations of the review processes used.	Discussion section paragraph 6
	23d	Discuss implications of the results for practice, policy, and future research.	Discussion section paragraph 7-8
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.	Not applicant
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	Not applicant
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	Not applicant
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	Funding section

Section and Topic	Item #	Checklist item	Location where item is reported
Competing interests	26	Declare any competing interests of review authors.	Conflicts of interests section
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.	Data Availability section

S2 Literature search strategy

PubMed:

("Multiple Myeloma"[Mesh] OR "Multiple Myeloma" OR "Myeloma, Multiple" OR "Myelomas, Multiple" OR "Myeloma, Plasma Cell" OR "Plasma Cell Myeloma" OR "Myelomatosis" OR "Myelomas, Plasma Cell" OR "Plasma Cell Myelomas" OR "Kahler Disease") AND ("Transplantation, Autologous"[Mesh] OR "Autologous Transplantation" OR "Transplantations, Autologous" OR "Autologous Stem Cell Transplantation" OR "Stem Cell Transplantation, Autologous" OR "Autologous Bone Marrow Transplantation" OR "Bone Marrow Transplantation, Autologous" OR "autologous hematopoietic stem cell transplantation" OR "ASCT") AND ("Transplantation, Homologous"[Mesh] OR "Homologous Transplantation" OR "Transplantations, Homologous" OR "Allogenic Bone Marrow Transplantation" OR "Allogenic Stem Cell Transplantation" OR "allogeneic hematopoietic stem cell transplantation" OR "allogeneic transplantation" OR "Tandem transplantation" OR "Double transplantation")

Embase:

('multiple myeloma'/exp OR 'multiple myeloma' OR 'myeloma, multiple' OR 'myelomas, multiple' OR 'myeloma, plasma cell' OR 'plasma cell myeloma' OR 'myelomatosis' OR 'myelomas, plasma cell' OR 'plasma cell myelomas' OR 'kahler disease') AND ('autologous transplantation'/exp OR 'autologous transplantation' OR 'transplantations, autologous' OR 'autologous stem cell transplantation' OR 'stem cell transplantation, autologous' OR 'autologous bone marrow transplantation' OR 'bone marrow transplantation, autologous' OR 'autologous hematopoietic stem cell transplantation' OR 'ASCT') AND ('homologous transplantation'/exp OR 'homologous transplantation' OR 'transplantations, homologous' OR 'allogenic bone marrow transplantation' OR 'allogenic stem cell transplantation' OR 'allogeneic hematopoietic stem cell transplantation' OR 'allogeneic transplantation' OR 'tandem transplantation' OR 'double transplantation')

Cochrane:

("Multiple Myeloma" OR "Myeloma, Multiple" OR "Myelomas, Multiple" OR "Myeloma, Plasma Cell" OR "Plasma Cell Myeloma" OR "Myelomatosis" OR "Myelomas, Plasma Cell" OR "Plasma Cell Myelomas" OR "Kahler Disease") AND ("Autologous Transplantation" OR "Transplantations, Autologous" OR "Autologous Stem Cell Transplantation" OR "Stem Cell Transplantation, Autologous" OR "Autologous Bone Marrow Transplantation" OR "Bone Marrow Transplantation, Autologous" OR "autologous hematopoietic stem cell transplantation" OR "ASCT") AND ("Homologous Transplantation" OR "Transplantations, Homologous" OR "Allogenic Bone Marrow Transplantation" OR "Allogenic Stem Cell Transplantation" OR "allogeneic hematopoietic stem cell transplantation" OR "allogeneic transplantation" OR "Tandem transplantation" OR "Double transplantation")