

INPLASY

Alterations in glutathione redox homeostasis in metabolic dysfunction-associated fatty liver disease

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ADMINISTRATIVE INFORMATION

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Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 23 October 2024 and was last updated on 23 October 2024.

INTRODUCTION

Review question / Objective To provide a systematic literature review of recent studies assessing the levels of LMW thiols in MASLD in in vivo and in vitro models, and human subjects.

Condition being studied Metabolic dysfunction-associated fatty liver disease (MASLD).

METHODS

Participant or population Animal studies, cell studies and studies on human participants.

Intervention Not Applicable.

Comparator Not Applicable.

Study designs to be included The search was performed on PubMed and Scopus databases for articles published between 1st January 2019 and 30th June 2024. The following advanced search approach was used for PubMed: (glutathione OR GSH OR thiols) AND (NAFLD) were searched first, then (glutathione OR GSH OR thiols) AND (MAFLD OR MASLD). English language re-striction was applied. The following advanced search approach was used for Scopus: TITLE-ABS-KEY ((glutathione OR GSH OR thiols) AND (NAFLD)) were searched first, then TI-TLE-ABS-KEY ((glutathione OR GSH OR thiols) AND (MAFLD OR MASLD)).

Eligibility criteria Articles publishing data describing alterations in GSH redox homeostasis in the presence of MASLD/NAFLD in animal models, cell lines, and human samples were all considered.

Information sources PubMed and Scopus databases.

Main outcome(s) The initial search returned 1012 documents, from which 165 eligible studies were selected and further described and qualitatively analysed.

Strategy of data synthesis

- The first qualitative analysis was conducted by examining the number of articles that discussed data on LMW thiols in MASLD from 2019 to 2024 categorising studies by mod-els or human samples.
- Analysis of eligible studies that measured either GSH or all LMW thiols across different experimental types of samples.
- Specific analysis of the number of studies that measure GSH for each animal models of MASLD.
- Methodological approaches used in studies on GSH and MASLD and discussion of experimental bias.

Subgroup analysis This systematic review aims to present a comprehensive summary of findings related to the levels of LMW thiols in MASLD by analysing experimental studies conducted in in vivo and in vitro models, and human subjects. A qualitative analysis of the included studies was also performed and reported.

Sensitivity analysis Not Applicable.

Country(ies) involved Italy.

Keywords MASLD; GSH; glutathione; low molecular weight thiols.

Contributions of each author

- Author 1 - Lucia Cesarini.
- Author 2 - Flavia Grignaffini.
- Author 3 - Anna Alisi.
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