

Fatty liver and metabolic syndrome in patients with celiac disease: A systematic review and meta-analysis

Beaumont

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BACKGROUND

- Recent studies have suggested a high prevalence of fatty liver and metabolic syndrome in patients with celiac disease (CeD).
- There is a lack of robust data exploring the association between gluten-free diet (GFD) and the prevalence of fatty liver and metabolic syndrome.

METHODS

- The PubMed, Embase, and the Cochrane Library databases were searched.
- Study protocol published on PROSPERO (CRD42022324357).
- Total 9 studies included in final analysis.
- Paired data available (in same group of patients before and after initiation of GFD)
 - Fatty liver: n= 869 patients
 - Metabolic syndrome: n= 1239 patients
- Statistical analysis performed in STATA v12.

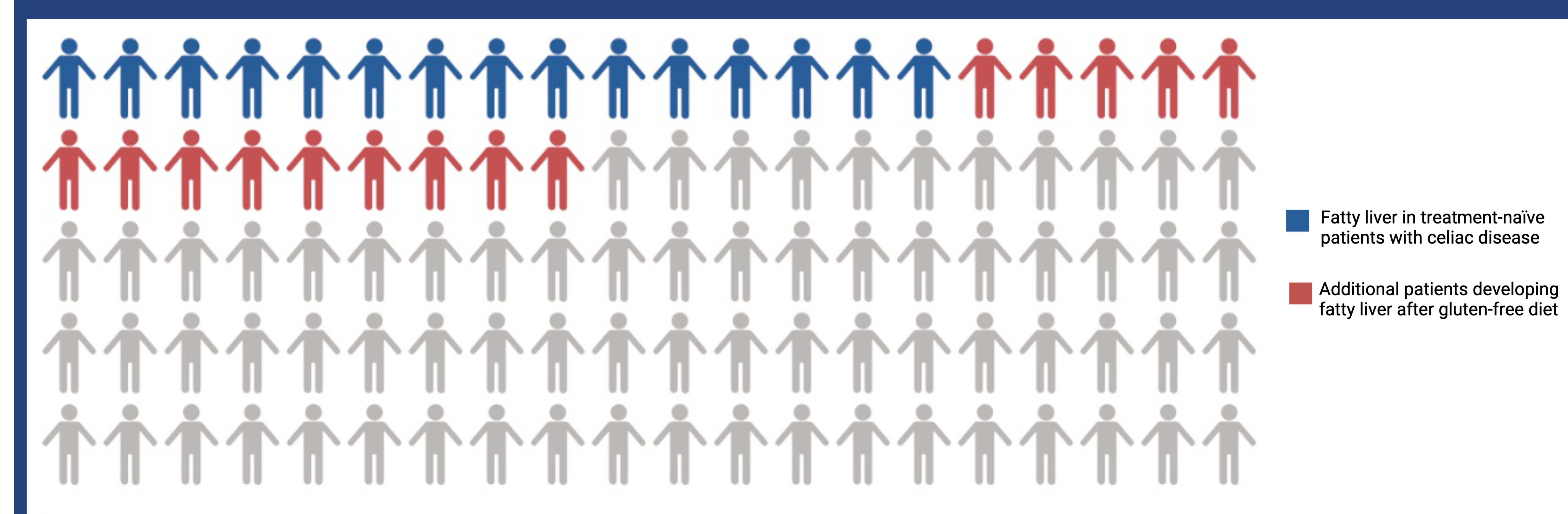
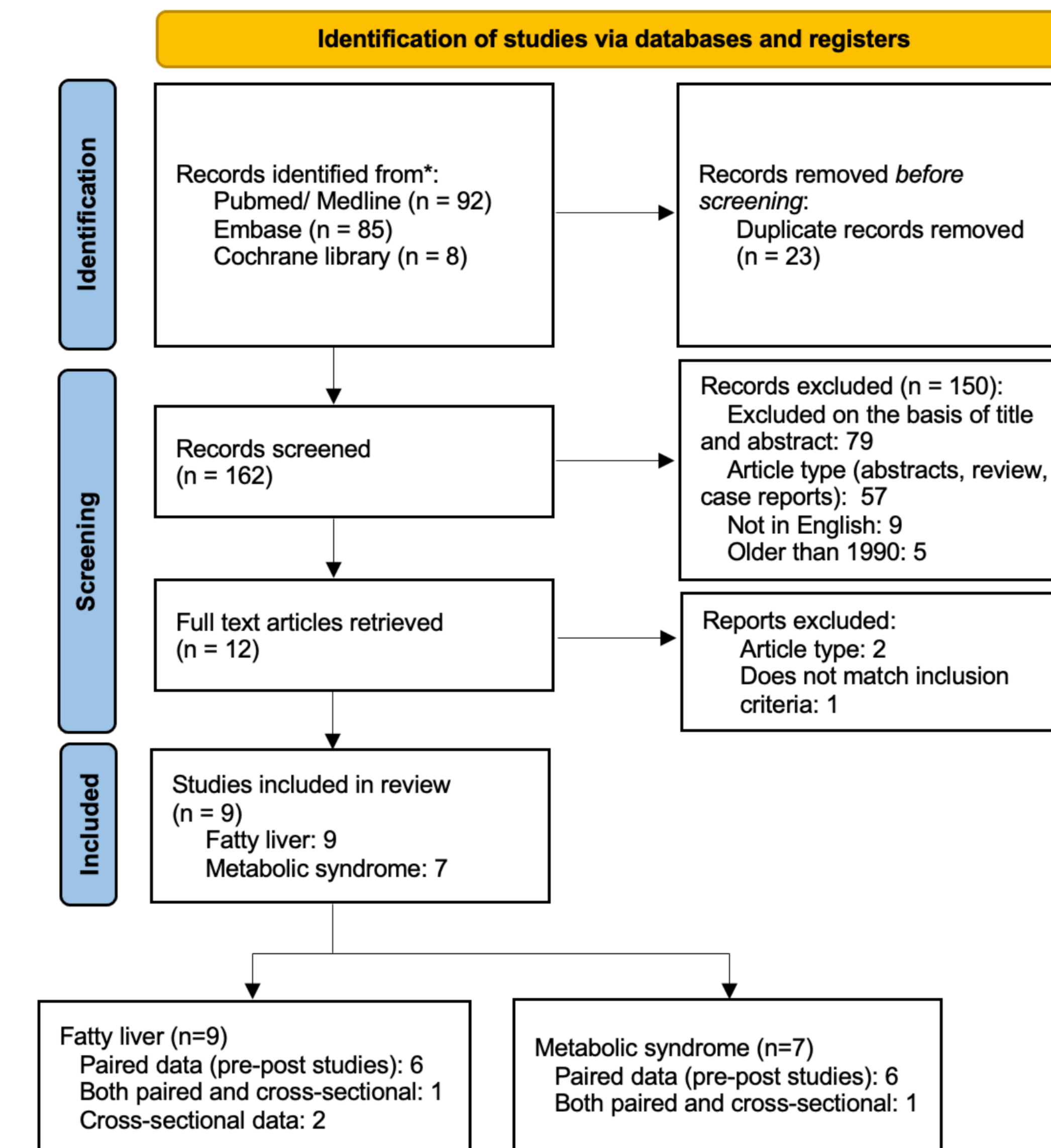


Figure 1: Representation of prevalence of fatty liver in treatment-naïve patients with celiac disease and after the initiation of gluten-free diet.

RESULTS

Fatty liver:

Pooled prevalence of fatty liver in CeD patients:

- Treatment-naïve patients: 15.3% (95%CI 5.6-28.5%, n=867)
- After initiation of GFD: 29.1% (95%CI 17.2-42.7%, n=869)
- On excluding studies at medium or high risk of bias, a significant increase was noted (25.2% [95%CI 19.4-31.5%] vs 39.2% [95%CI 30.9-47.8%], p=0.008).

Metabolic syndrome:

Pooled prevalence of metabolic syndrome in CeD patients:

- Treatment-naïve patients: 4.3% (95%CI 2.4-6.7%, n=1239)
- After initiation of GFD: 24.2% (95%CI 19.5-29.3%, n=1239)



Figure 2: Representation of prevalence of metabolic syndrome in treatment-naïve patients with celiac disease and after the initiation of gluten-free diet.

CONCLUSION

- Patients with CeD have a high prevalence of fatty liver and metabolic syndrome at the time of presentation, which increases further after institution of GFD.
- Patients with CeD should be screened for presence of fatty liver and metabolic syndrome- first at the time of diagnosis, followed by periodic monitoring.
- Counselling to reinforce a nutritionally balanced diet and regular physical activities is important. There is need for legislation to monitor caloric and fat content of commercially available gluten-free foods.

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