CROSSTALK BETWEEN MICRORNAS AND OXIDATIVE STRESS IN COELIAC DISEASE: A PILOT STUDY

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A pilot study of 51 subjects found differential expression of specific microRNAs and elevated oxidative stress markers in adult coeliac disease patients, with evidence of correlations between blood oxidative stress levels and certain microRNAs during follow-up and in complicated disease.

KEY POINTS

- Among eight microRNAs evaluated in plasma, miR-451, miR-146, and miR-155 were differentially expressed between coeliac disease patients at diagnosis, patients on gluten-free diet for at least one year, and healthy controls.
- Blood levels of the oxidative stress marker 8-OHdG were significantly higher in coeliac disease patients at diagnosis and on follow-up compared to control patients (p=0.05 and p=0.001, respectively).
- Blood 8-OHdG levels correlated positively with miR-155 in complicated coeliac disease (r=0.9, p=0.04) and with miR-200 in follow-up patients (r=0.68, p=0.02), while correlating negatively with miR-1226 in follow-up patients (r=-0.62, p=0.04).
- No correlations were found between tissue 8-OHdG levels and microRNAs, suggesting the crosstalk between oxidative stress and microRNAs may be detectable in blood but not duodenal tissue.
- This retrospective pilot study in adults suggests a potential interplay between oxidative stress and microRNA regulation in coeliac disease pathogenesis that warrants investigation in larger prospective studies.

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