Simvastatin & Celiac Disease

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Why in News?

A recent study from the University of the Basque Country (EHU) suggests that simvastatin, a drug already approved for use in humans, can reduce inflammation associated with celiac disease.

Key Aspects of the Study

- Researchers found that simvastatin ***reverses specific RNA modifications triggered by viral infections***, which otherwise cause, promote, or exacerbate the inflammatory response in celiac patients.
- **Mechanism -** The study focused on how viral infections leave a "footprint" on RNA, leading to methylation that drives inflammation.
- **Drug Action -** Simvastatin was found to modulate these RNA modifications, lowering inflammatory levels in laboratory settings.
- **Study Stage -** While promising, this research is in the early, pre-clinical phase, with findings based on cell cultures and biopsies.
- **Alternative Approaches -** Other experimental therapies, such as the *transglutaminase 2 inhibitor ZED1227*, are also in trials to block gluten-induced intestinal damage.

Celiac disease

- It is an ***inherited autoimmune disease.***
- It causes a reaction in human body to a protein called ***gluten.***
- When humans eat gluten, it triggers an abnormal response from the immune system.
- The immune system attacks the gluten in the digestive system, causing inflammation.
- Inflammation damages the inside of the small intestine.
- This makes it harder for your intestine to absorb nutrients from your food.
- **Cause -** Autoimmune reaction triggered by gluten

- Leads to inflammation and damage of intestinal villi
- Results in poor nutrient absorption (malabsorption)
- **Symptoms - In children -** Chronic diarrhea, Abdominal pain, bloating, Weight loss, stunted growth.
- **In adults –** Fatigue, Anemia (iron deficiency), Bone pain (due to calcium/vitamin D deficiency)
- Skin rash (dermatitis herpetiformis)
- Some individuals may be **asymptomatic**.
- **Treatment -** Strict lifelong gluten-free diet
- By Avoiding wheat, barley, rye.
- Safe foods are rice, maize, millets, fruits, vegetables.

Reference

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