

GLP -1 Receptor Agonists (GLP-1 RA)

Prelims: *Current events of national and international importance*

Why in News?

Recent studies have shown that GLP-1 Receptor Agonists (GLP-1 RA) can be used to treat Alzheimer's and Diabetes.

- **GLP-1 RA** - These are synthetic drugs that mimic the actions of GLP-1.
- **Longer lifetime** - By fatty acid acylation that protects GLP-1 from breaking, it's been able to extend that to up to 160 hours.

***Fatty acid acylation** is drug molecule attached to a fatty acid, in this case, GLP-1. That will allow the drug to bind to a natural protein called **albumin**.*

Albumin is a protein that plays a crucial role in transporting various substances throughout the body, including fatty acids.

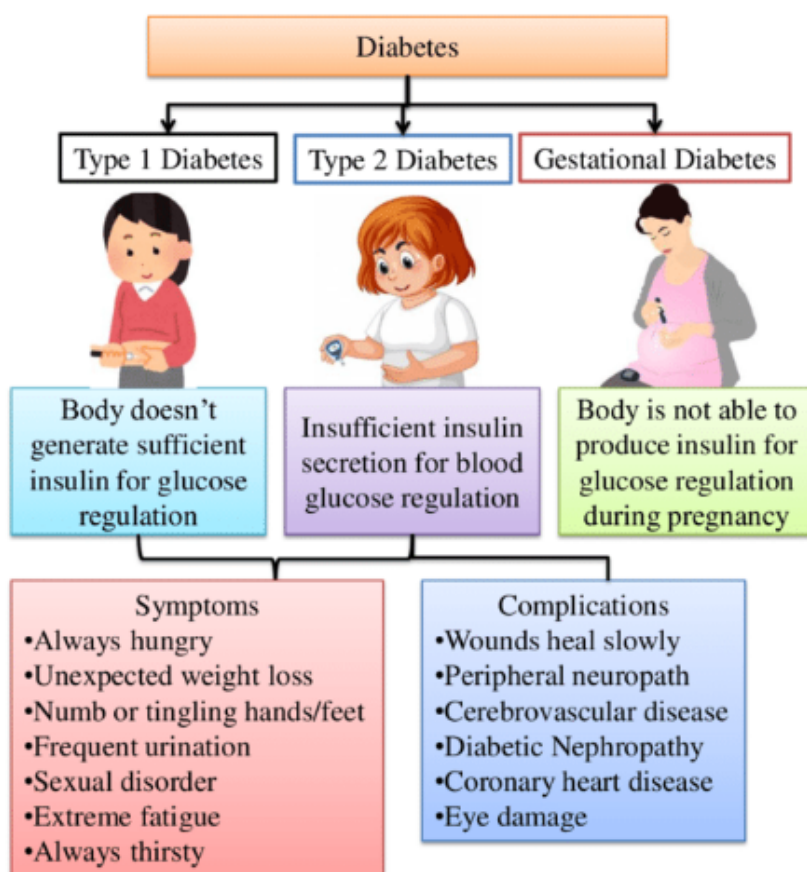
- **Feature** - It solves druggability problem of GLP-1, by attaching to albumin, that protect the drug from degradation, from being cleared by the kidneys.

***Druggability** is the ability of a protein to bind a modulator and produce a desired therapeutic effect.*

- **Availability of GLP-1 RA** - They are available in different forms, including injectable medications and, increasingly, oral formulations.
- **Uses** - Stimulates insulin secretion to lower blood sugar.
- Manages appetite and weight
- **Slows gastric emptying** - Contribute to a feeling of fullness and reduce calorie consumption.
- It may have neuroprotective effects, potentially improves conditions like Alzheimer's and Parkinson's disease (as per National Institutes of Health)
- It reduces overall inflammation in the body
- **Treatment** - Type 2 diabetes and obesity.

Quick facts

- It is **chronic disease** where blood glucose (sugar) levels are too high, either because the body doesn't produce enough insulin, or because the body can't effectively use the insulin it does produce.
- **Treatment** - Managing blood sugar levels and preventing complications, with approaches varying based on diabetes type.
- **Lifestyle changes** - Like diet and exercise are crucial, alongside medications like insulin (primarily for Type 1) or oral medications (often for Type 2).
- Monitoring blood sugar, weight management, and stress management also play important roles.



Reference

[The Indian Express| GLP-1 RA](#)