An interesting new central acting oral antidiabetic drug

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Timed-release bromocriptine

- A Sympatholytic,D2-Dopamine Agonist ; has been approved by the U.S. Food and Drug Administration (FDA) for the treatment of type 2 diabetes
- Timed bromocriptine administration within 2 h of awakening
  - Augment low hypothalamic dopamine levels ; inhibit excessive sympathetic tone within the central nervous system (CNS)- resulting in reduction in postmeal plasma glucose levels due to enhanced suppression of hepatic glucose production

- A decrease in elevated VMH noradrenergic and serotonergic levels with a resultant
  - Decline in hepatic glucose production/gluconeogenesis,
  - Reduced adipose tissue lipolysis,
  - Improved insulin sensitivity.

- Addition of bromocriptine to poorly controlled type 2 diabetic patients treated with diet alone, metformin, sulfonylureas, or thiazolidinediones produces a 0.5–0.7 decrement in HbA1c.
- Reduces fasting and postmeal plasma free fatty acid (FFA) and triglyceride levels

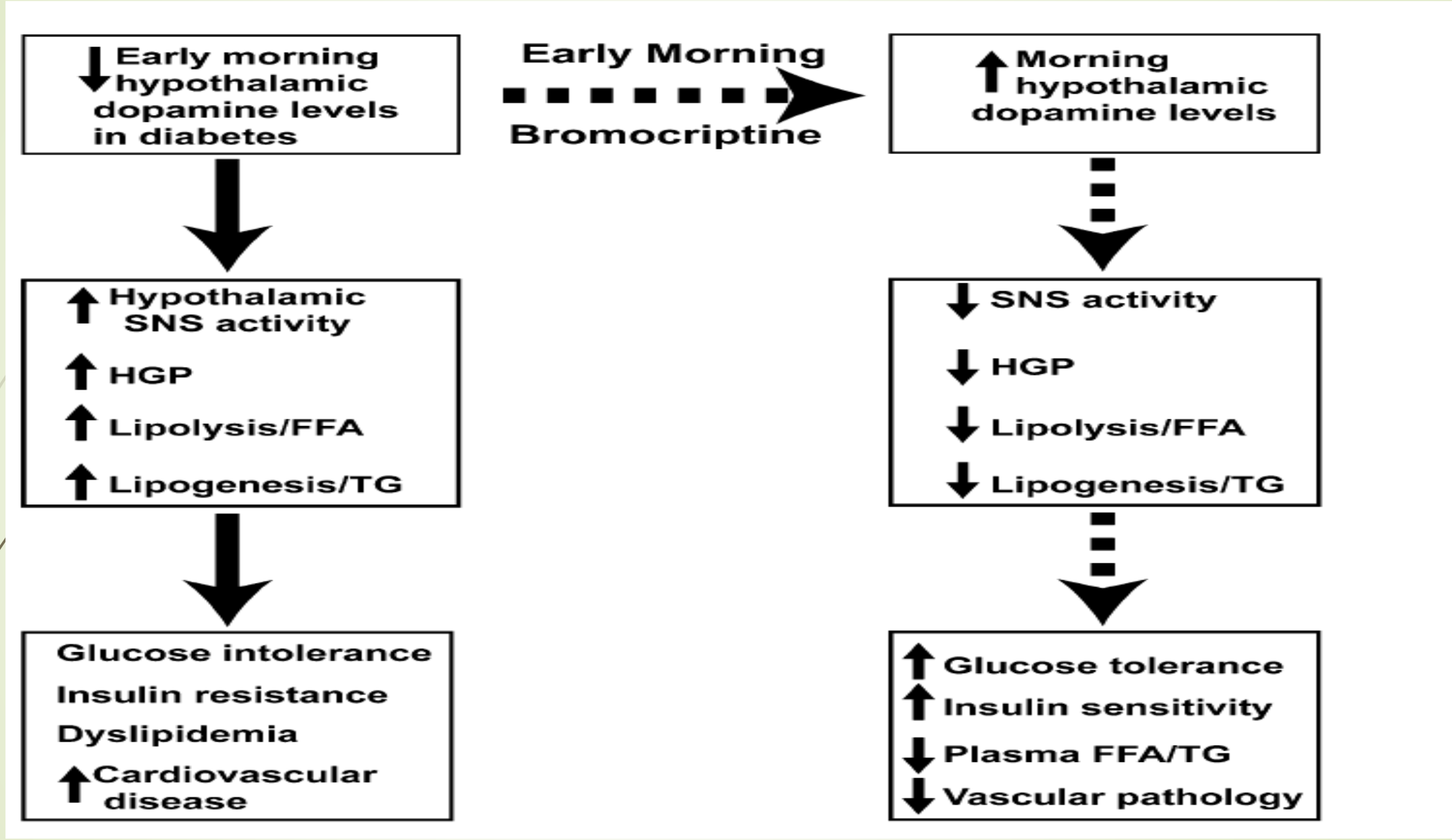
- Improves glycemic control and dyslipidemia without change in body weight in type 2 diabetic and obese nondiabetic humans
- Reduced the composite cardiovascular end point by 40% in a 52 doubleblind, placebo-controlled study in type 2 diabetic patients

- Other advantages - absence of hypoglycemia, weight neutrality, no need for dose adjustment in patients with moderate renal insufficiency, lack of edema and CHF, and good side effect profile.

Pharmacokinetics and dose

- Rapidly dissolved and absorbed within 30 min
- When ingested on an empty stomach, the maximum plasma concentration is reached within 60 min.
- Absorption is delayed by food and peak plasma levels are achieved at 120 min in the fed state.

- Extensive hepatic first-pass extraction and metabolism by the cytochrome P450 system, specifically CYP3A4 ; 5–10% of the ingested dose reaches the systemic circulation
- Ninety-eight percent of ingested bromocriptine is excreted via the biliary route
- An elimination half-life of 6 h.



Mechanism of action of Timed-release bromocriptine

Dose:

- 0.8 mg/day - a maximum of 4.8 mg/day
- administered as a once daily dose within 2 h of awaking

Safety and tolerability- well tolerated

- Nausea
- Asthenia
- Constipation
- Dizziness
- Rhinitis

References

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