MEDIBEATS
The Medical Bulletin

# In Endocrinology

## THYROID AND DIABETES

- Hypothyroidism and Diabetes are both chronic diseases needing lifelong follow up and treatment
- Thyroid disorders are more common in People with T2DM.
- T2DM is more common in thyroid disorders
- Both share a few similar symptoms like fatigue, weight gain, edema
    - Both have effects on –
    - Blood Pressure and Lipids
    - Cardiovascular health and mortality
    - NAFLD, Arthritis, Kidney dysfunction, Cancer mortality
    - microvascular complications

## IMPACT OF DIABETES MELLITUS ON THYROID

- T2DM affects TSH levels
- Impairs conversion of T4 to T3 in the periphery
- Nocturnal TSH peak blunted
- TSH response to TRH is impaired
- Insulin resistance and Hyperinsulinemia can cause Thyroid tissue proliferation

## EFFECT OF HYPOTHYROIDIDM ON DIABETES MELLITUS

- Thyroid hormones affect energy homeostasis – Glucose, lipid and Protein metabolism
- Thus can influence glycaemic control
- Hypothyroidism can worsen T2DM control and increase risk for complications
- Adjust Diabetes medication doses including insulin when thyroid function normalize

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## IMPACT ON DIABETES COMPLICATIONS

- Increased risk of nephropathy in T2DM with SCH, which is explained by decrease in CO and increase in PVR in hypothyroidism and the resulting decrease in RBF and GFR.
- Diabetic patients with SCH have more severe retinopathy than Euthyroid patients with DM.
- Frequent hypoglycaemic events
- Hypothyroidism may magnify CVD risk through dyslipidaemia and HTN

## RECOMMENDATIONS FOR TREATMENT

- TSH levels should be monitored after beginning metformin treatment in diabetic patients with overt and subclinical hypothyroidism.
- Assessment of serum TSH & FT4 levels and thyroid ultrasound is not required in patients treated with sulphonylurea
- Pioglitazone should not be administered to diabetic patients with Graves' ophthalmopathy
- GLP-1 RA are not recommended in patients with a personal or family history of MTC or type-2 MEN
- Adjustment of insulin treatment should be considered in patients with diabetes after the occurrence of thyroid dysfunction
- Evaluation of thyroid function should be performed during ketoacidosis in patients with clinical symptoms and signs raising a suspicion of hyperthyroidism.
- Glycaemic control should be reassessed in hyper thyroid subjects after the control of hyperthyroidism with ATDs
- An increased insulin dose may be necessary when starting treatment with L-T4 in hypothyroid patients with DM
- Excessive LT4 therapy inducing TSH suppression should be avoided because it may induce iatrogenic hyperthyroidism determining an impaired glycaemic control
- The use of statins should be considered only after the correction of hypothyroidism to prevent the risk of myopathy

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