Biochemistry

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INTRODUCTION
Thyroid dysfunction has a great impact on lipids. Hypothyroidism is relatively common and is associated with an unfavorably affect on lipids. Hypothyroidism is present in 1.5% to 15% of the patients with hyperlipidemia. The most common cause of resistance to thyroid hormone (RTH) is Heterozygous thyroid hormone receptor Beta (THRB) Gene Mutation. Thyroid hormone plays an important role in Thermogenesis and Maintenance of Homeostasis. The present study reviews the evidence that lipid metabolism regulates via thyroid hormone receptor. The liver is an important target organ of thyroid hormone. However hepatic target genes have been identified and known about the pattern of their regulation by thyroid hormone.

RESULTS
Table 1
<table>
<thead>
<tr>
<th>Parameters</th>
<th>Patients (n=300)</th>
<th>Controls (200)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Cholesterol (mg/dl)</td>
<td>364</td>
<td>158</td>
<td>0.001</td>
</tr>
<tr>
<td>HDL Cholesterol (mg/dl)</td>
<td>85</td>
<td>44</td>
<td>0.001</td>
</tr>
<tr>
<td>LDL Cholesterol (mg/dl)</td>
<td>178</td>
<td>77</td>
<td>0.001</td>
</tr>
<tr>
<td>Triglycerides (mg/dl)</td>
<td>318</td>
<td>114</td>
<td>0.001</td>
</tr>
<tr>
<td>VLDL Cholesterol (mg/dl)</td>
<td>64</td>
<td>22</td>
<td>0.001</td>
</tr>
</tbody>
</table>

The Biochemical Parameters were compared with mean S_+D p value

Table 2
<table>
<thead>
<tr>
<th>Parameters</th>
<th>Patients (n=300)</th>
<th>Controls (200)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSH (mU/L)</td>
<td>160</td>
<td>0.3 – 4.7</td>
<td>0.01</td>
</tr>
</tbody>
</table>

CONCLUSION
With reference to table 1 the values of lipid profiles of the patients were found high compared to controls. The high values indicate the presence of hyperlipidemia. Where as in table 2 Thyroid Stimulating Hormone (TSH) value is found very much high and other hormones were found lesser the normal values which indicate the presence of hypothyroidism.

REFERENCES

KEYWORDS
Gene Mutations, Hypothyroidism, Hyperlipidemia

MUTATIONAL STUDY
These genes include DUOX2 DUOXA2, DUOX1, TPO, TG, SLC26A4, SLCRA5 mutations in each of these genes disrupt a in thyroid hormone synthesis, leading to abnormally low levels of these hormones. Mutations in the APOB, LDL, LDRAP1 and PCSK9 genes cause hyperlipidemia. These genes were selected to be sequenced in this study. All exon and exon - introns boundaries of these genes were amplified by multiplex PCR using the 48 x 48 Accus Array platform (fluid digm) according to the manufacturer's protocol. Primers were designed by iPLEX Assay Designed software (Sequences). Deep sequencing of these amp libraries was carried out by using the Hiseq2500 or Hiseq3000 platform. To avoid base pair variants caused by multiplex PCR, target sequence were amplified and deeply sequenced in duplicate for each sample.

TSH (mU/L)
T3 (nmol/L)
T4 (pmol/L)
FT3 (pmol/L)
FT4 (pmol/L)

The Biochemical Parameters were compared with mean S_D p value

DISCUSSION
Clinical observations showing inverse correlation between the degree of hyperlipidemia and thyroid status coupled with the fact that APOA5 is a major determinant of lipid homeostasis prompted to explore the potential regulation of this recently identified gene by TH.

REFERENCES
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