

Interhospital Endocrine Conference 1/2560

Answer of Case 4

Diagnosis:

- Cushing's syndrome with falsely high ACTH due to immunoassay interference
- Euthyroid hypothyroxinemia in Cushing's syndrome

Comments:

- Interfering antibodies can give rise to falsely high results or, less commonly, falsely low results
- The frequency of immunoassay interference is variable and depends on type of Ab; yet, estimated prevalence is < 2%
- It is not a commonly identified problem; however, it may have dramatic consequences on patients to unnecessary investigations and treatments
- Type of antibodies
 - o Endogenous antibodies
 - Heterophilic antibodies are "weak" antibodies in patients with autoimmune diseases, and other inflammatory disease, allergies, viral infections such as EBV or influenza or after a vaccination, also including proteins such as rheumatoid factor
 - Anti-animal Antibodies (HAAA) have strong avidity for antigens and may be present as a result of receiving treatments containing animal derived monoclonal antibodies, one of the most documented HAAA is human anti-mouse antibodies (HAMA), which has been increased following treatments using mouse monoclonal antibodies
 - o Exogenous antibodies
- There are many methods to identify the assay interference, in this case, RIA assay can reveal low ACTH level while sandwich method would demonstrate falsely high ACTH
- HDDST is still mandatory to differentiate the cause of Cushing's, clinical judgement is essential
- Hypothyroxinemia in hypercortisolemia state is difficult to differentiate from central hypothyroidism and this condition will disappear after definite treatment of Cushing's