Question: 154

You are discussing treatment choices with the family of a 13-year-old girl in whom you have just diagnosed hyperthyroidism. You include antithyroid drug therapy, surgery, and radioactive iodine treatment in your discussion. They choose antithyroid drug therapy with methimazole for initial therapy.

Of the following, the MOST likely adverse effect of this therapy is

A. agranulocytosis
B. cholestatic jaundice
C. headache
D. hematuria
E. rash
Treatment for hyperthyroidism includes thyroid ablative therapy using radioactive iodine, surgical thyroidectomy, or antithyroid drugs. In general, these options all are acceptable, and the decision regarding therapy should be reached jointly by the family and the physician.

Antithyroid drugs are used in the treatment of hyperthyroidism in the hope that the underlying immune disorder will remit spontaneously and long-term medication will not be required. Disease remission occurs in approximately 25% of individuals after each year of treatment. Clinical signs of potentially successful remission include a small thyroid gland and the need for minimal thionamide (eg, methimazole, propylthiouracil) therapy. The laboratory findings indicative of remission include a decrease in thyroid-stimulating immunoglobulin concentrations to the normal range. The most common adverse effects of the thionamide antithyroid drugs such as methimazole and propylthiouracil are rashes, arthritis, and arthralgias, which are considered minor complications. Headache is not a common adverse effect of these agents. More severe complications are relatively rare and include hepatitis. Liver involvement with methimazole is reversible, but propylthiouracil-induced hepatitis may result in liver failure. Neutropenia may be seen with either methimazole or propylthiouracil. It is important to obtain a baseline white blood cell count before starting therapy because thyrotoxicosis itself may be associated with neutropenia. Agranulocytosis is a rare complication, usually occurring in older individuals within the first few months of therapy, and sometimes is irreversible. It may be dose-dependent.

Hematuria is an unusual complication of therapy with these drugs and results from systemic vasculitis. Vasculitis is more common with propylthiouracil and rarely reported with methimazole. If a minor adverse effect (rash or myalgia) occurs, it may be possible to switch to the other antithyroid thionamide agent, but in most cases, a different treatment modality (either radioactive iodine or thyroidectomy) is suggested. These thyroid ablative treatments cause hypothyroidism, and there is an increased risk of recurrence if thyroid tissue is allowed to remain. The complications of radioactive iodine are primarily theoretical. Those of thyroidectomy are real and include the risk of hypoparathyroidism or laryngeal nerve damage. Such risks are lessened in the hands of a very experienced thyroid surgeon.

References:


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