Three treatment options are available for patients with hyperthyroidism: antithyroid drugs, surgery and radioiodine therapy. For patients with Graves’ disease all three options can be applied. For patients with toxic nodular goitre or toxic adenoma, treatment with antithyroid drugs is only indicated for a limited time, prior to definitive therapy with one of the other two methods.

Treatment routines vary between clinics and countries, most markedly for Graves’ disease. In Europe, for example, the preferred method of treatment for this disease is medical therapy, while in the USA, radioiodine is the preferred method. This variation reflects the difference in therapeutic traditions and other factors, such as local legislation governing radiation exposure. The variation in therapy also reflects the fact that no single therapy is considered to be outright superior to another. In several countries radioiodine therapy has gained increasing acceptance due to the relatively low risk of complications and also the cost effectiveness.

17.1 General Considerations

The patient should, as far as possible, be informed of the available therapies and the patient’s own viewpoint should be taken into account when choosing therapy. At the same time, they should also be informed about the typical disease symptoms. Frequently, the patient is found to have more thyrotoxic symptoms than they had noticed themselves.

Patients with pronounced thyrotoxicosis can experience a lower threshold for stress (“short fuse”), asthenia and depression and frequently be involved in conflicts and experience problems in social relations both at home and work. A reassurance that the

Fig. 17.1 Medical treatment of Graves’ disease
problems may be linked to the disease, that they are transitory and will resolve when the disease has been treated, can be a relief for both the patient and others involved in a difficult situation. The patient should also be informed that the problems can persist for several months after successful therapy through normalization of hormone levels.

It is not unusual for the patient to quickly regain weight once treatment has been initiated and in some cases continue with further weight increase. The patient should therefore receive appropriate dietary advice at quite an early stage. Because many patients lose muscle mass, it is advisable to provide individually tailored exercise advice when the patient becomes euthyroid.

As in many other diseases, it is important that patients adjust their lifestyle to the situation. The importance of adequate sleep must be emphasized to the patient and similarly the importance of planning the day and adjusting demands and expectations.

### 17.2 Medical Treatment

Medical treatment of hyperthyroidism can be used for patients of all ages. The most commonly used medical treatment is antithyroid drugs, which have a direct effect on hormone synthesis by the thyroid cells. Medical treatment also includes beta blockers.

Beta blockers (propranolol 20–40 mg × 3 or metoprolol as depot tablet 50–100 mg × 1–2) can be given to relieve symptoms while the patient is waiting for further investigation and before hormone levels have normalized and symptoms have receded. Beta blockers alleviate adrenergic symptoms such as palpitations, tremor and to a certain extent restlessness, while the elevated metabolism is not affected. In contrast to patients treated with antithyroid drugs, patients who only receive beta blockers do not regain muscle mass and body weight.

Beta blockers in higher doses are used at certain institutions as treatment prior to and during surgery for mild hyperthyroidism. Treatment with stable iodine is reserved for presurgery for patients who react negatively to antithyroid drugs or develop toxic crisis.

#### 17.2.1 Antithyroid Drugs

Antithyroid drugs block the capacity of the thyroid gland to synthesize the hormones T3 and T4. Commonly used medicines are thiamazol, carbimazole (less commonly) and propylthiouracil. The half-life of thiamazol is longer and is therefore given in two daily doses (Table 17.1). Propylthiouracil is normally given in three doses. Thiamazol and propylthiouracil have similar mechanisms of action in the thyroid, but propylthiouracil can also inhibit the peripheral conversion of T4 to T3. Propylthiouracil is commonly recommended when treating hyperthyroidism during pregnancy, lactation or thyrotoxic crisis.

Table 17.1: Antithyroid drugs

<table>
<thead>
<tr>
<th>Drug</th>
<th>Initial dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thiamazol (5 mg)</td>
<td>10–15 mg, two times daily</td>
</tr>
<tr>
<td>Propylthiouracil (50 mg)</td>
<td>50–100 mg, three times daily</td>
</tr>
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