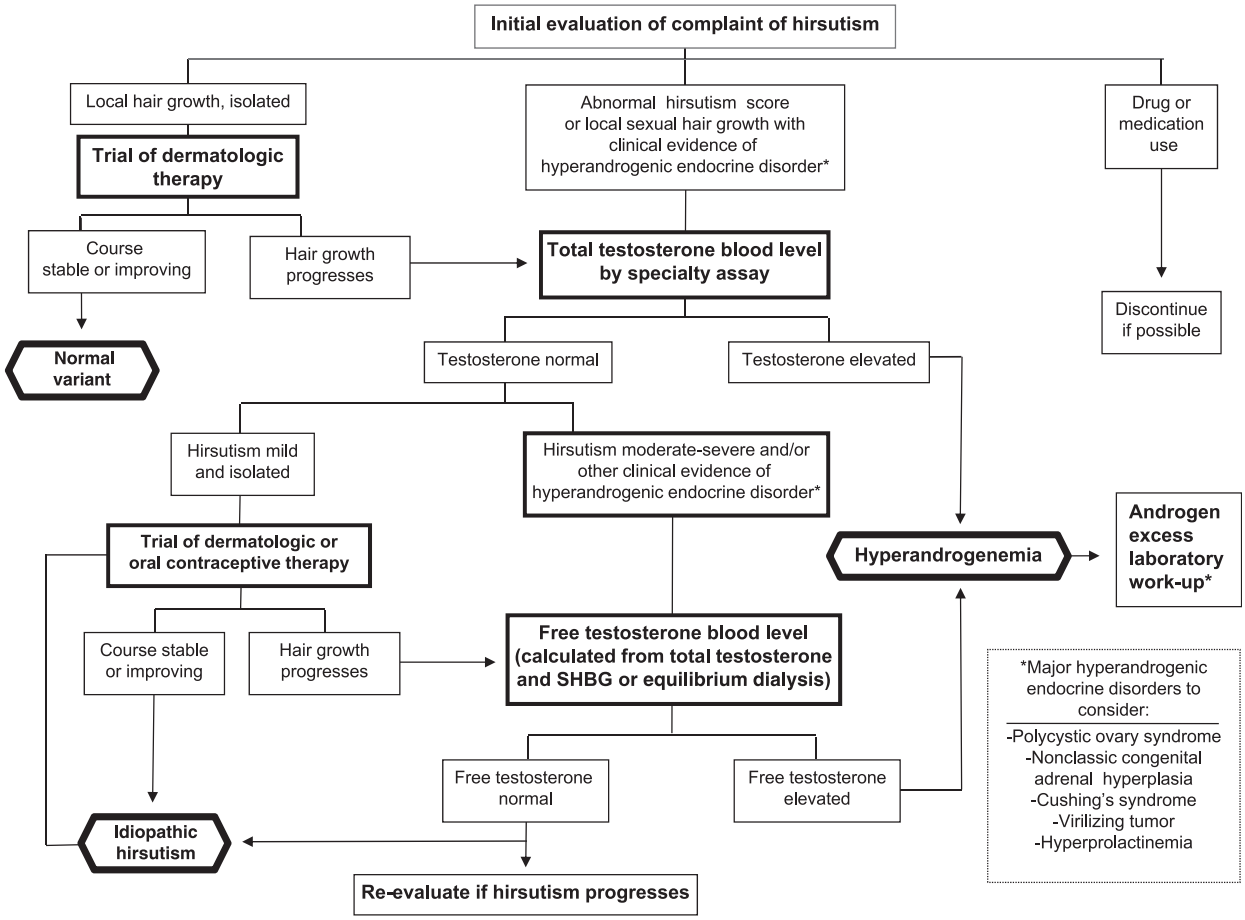

Figure 2. Evaluation and treatment of hirsutism in premenopausal women. Figure note: Local sexual hair growth (*i.e.*, in the absence of an abnormal hirsutism score) that is not accompanied by clinical evidence of a hyperandrogenic endocrine disorder does not require an endocrine workup before embarking on dermatologic therapy (cosmetic or direct hair removal measures). Elevated androgen levels should be ruled out in women with hirsutism or any degree of sexual hair growth who also have clinical evidence of a hyperandrogenic endocrine disorder. Clinical evidence of menstrual irregularity, infertility, galactorrhea, signs or symptoms of hypothyroidism, Cushing syndrome, acromegaly, central obesity, acanthosis nigricans, clitoromegaly, or sudden-onset or rapid-progression hirsutism suggests the presence of a hyperandrogenic endocrine disorder. PCOS is the most common hyperandrogenic disorder associated with hirsutism. However, androgen-secreting tumors and nonclassic congenital adrenal hyperplasia are other major causes that clinicians should consider. Drugs that cause hirsutism include anabolic or androgenic steroids (a consideration in athletes, users of dietary supplements, patients with sexual dysfunction, or in patients with a partner who uses testosterone gel) and valproic acid (a consideration in patient with neurologic disorders). An accurate and specific assay, such as mass spectrometry, is the best choice for assessing serum total testosterone concentrations. Norms are standardized for early morning, when levels are the highest, and for days 4 to 10 of the menstrual cycle (see Section 5, Androgen Testing Remarks) when ovarian follicle development is the most comparable to that of women with hyperandrogenic anovulation; clinicians should interpret marginal values obtained at other times accordingly. Women with mild hirsutism, a normal total testosterone level, a pelvic ultrasound showing normal ovarian morphology (if performed), and no clinical evidence of other hyperandrogenic endocrine disorders have idiopathic hirsutism, which may be responsive to OC therapy. However, if the serum total testosterone is normal in the presence of moderate or severe hirsutism or if there is clinical evidence of PCOS or other endocrine disorder, clinicians should test serum-free testosterone levels. Assessing free testosterone levels using high-quality testosterone and SHBG or equilibrium dialysis assays with well-defined reference intervals is the single most useful, clinically sensitive marker of androgen excess in women. A simultaneous assay of early-morning 17-hydroxyprogesterone is indicated in subjects at high risk for nonclassic congenital adrenal hyperplasia (see text and Section 5, Androgen Testing Remarks). Progression of hyperandrogenism in the presence of a normal serum-free testosterone is very unusual, and clinicians should thoroughly reevaluate these patients (3). Unless fertility is an issue (37), demonstrating polycystic ovary morphology to diagnose ovulatory PCOS is unlikely to affect management. Adapted from Martin *et al.* (38).

adrenal hyperplasia due to 21-hydroxylase deficiency by measuring early morning 17-hydroxyprogesterone levels in the follicular phase or on a random day for those with amenorrhea or infrequent menses. In hirsute patients with a high risk of congenital adrenal hyperplasia (positive family history, member of a high-risk ethnic group), we suggest this screening even if serum total and free testosterone are normal.

A separate Endocrine Society clinical guideline describes the approach to the diagnosis of PCOS in detail (40). Different subspecialists use different strategies for evaluating the patient with hirsutism (24, 41–43). The evaluation of hyperandrogenemic women may include the following: pregnancy tests in patients with amenorrhea; measuring dehydroepiandrosterone (DHEA) sulfate (DHEAS) to screen for adrenal hyperandrogenism;