somatropin (recombinant) (so-e-ma-troe-pin)

Genotypref

Classification
Therapeutic: hormones
Pharmacologic: growth hormones

Pregnancy Category C

Indications

Contraindications/Precautions
Contraindicated in: Closure of epiphyses; Active neoplasia; Hypersensitivity to growth hormone or methylparaben; Acute critical illness (therapy should not be initiated) or respiratory failure; Diabetic ketoacidosis; Prader-Willi syndrome with obesity and respiratory impairment (risk of fatal complications; can be used only if growth hormone deficiency is documented)

Use Cautiously in: Growth hormone deficiency due to intracranial lesion; Concomitant adrenocorticotropic hormone (ACTH) deficiency; Diabetes (may cause insulin resistance). Thyroid dysfunction; Puberty Citro with Turner syndrome may be at risk for pancreatitis. GI: ↑ sensitivity, ↑ risk of adverse reactions. GL: lactation; ↑ risk of supernatients.

Adverse Reactions/Slode Effects
CV: edema of the hands and feet. Endo: hyperglycemia, hypothyroidism, insulin resistance. GI: pancreatitis. Local: pain at injection site, local lipoatrophy or lipodystrophy with subcutaneous use. MS: arthralgia.

Interactions
Drug-Drug: Excessive corticosteroid use (equivalent to 10–15 mg/m2/day) may mask the response to growth hormone.

Route/Dosage
Subcut (Children): Growth hormone inadequacy—0.16–0.24 mg/kg/wk divided in 6–7 daily doses. Prader-Willi syndrome—0.24 mg/kg/wk divided into 6–7 daily doses. Children SGA at birth—0.48 mg/kg/wk divided into 6–7 daily doses. Turner syndrome—0.33 mg/kg/wk divided into 6–7 daily doses. Idiopathic short stature—0.47 mg/kg/wk divided into 6–7 daily doses.

Subcut (Adults): 0.04 mg/kg/wk initially divided in 6–7 daily doses or 0.2 mg/day starting dose (without consideration of body weight) then gradually ↑ by 0.5–1.0 mg/day q 1–2 months until clinical response achieved (max dose 0.08 mg/kg/wk).

NURSING IMPLICATIONS
Assessment
 Growth Failure: Monitor bone age annually and growth rate determinations, height, and weight every 3–6 mo during therapy.

Dosage Administration
 Monitor thyroid function prior to and during therapy. May decrease T4, radioactive iodine uptake, and thyroid-binding capacity.
Hypothyroidism necessitates concurrent thyroid replacement for growth hor-
mone to be effective. Serum inorganic phosphorus, alkaline phosphatase, and
aparathyroid hormone may be monitored during therapy. Diabetic patients may require
an insulin dose. Monitoring for development of neutralizing antibodies if growth rate does not exceed
2.5 cm/year
Monitor alkaline phosphatase closely in patients with adult growth hormone defi-
cency.

Potential Nursing Diagnoses
Disturbed body image (indications)Implementation
● Rotate injection sites with each injection.
Genotropin intra-mix: Dissolve powder with solution provided with 2-chamber
cartridge as directed. Gently tip cartridge upside down a few times until contents
are completely dissolved. Do not shake; shaking can denature the active ingredi-
ent. The 1.5-mg cartridge is stable following dilution for 24 hr if refrigerated. The
5.5-mg and 13.8-mg cartridges contain preservatives and are stable for 14 days if
refrigerated.
Genotropin Pen: Prepare and administer as directed in patient instruction insert.
Store in the refrigerator.
Genotropin MiniQuick: For single use only. Inject immediately after reconstitu-
tion; may be refrigerated for 24 hr after reconstitution. Follow directions on pa-
tient package insert for reconstitution and administration.
Subcut: Injection volume should not exceed 1 mL.

Patient/Family Teaching
● Instruct patient and parents on correct procedure for reconstituting medication,
site selection, technique for subcut injection, and disposal of needles and syrin-
ges. Remind does scheduled. Parents should report persistent pain or edema at in-
jection site.
● Explain rationale for prohibition of use for increasing athletic performance. Ad-
mallination to persons without growth hormone deficiency or after epiphyseal
 closure may result in acromegaly (coarsening of facial features; enlarged hands,
feet, and internal organs; increased blood glucose; hypertension).
● Assure parents and child that these dose forms are synthetic and therefore not ca-
pable of transmitting Creutzfeldt-Jakob disease, as was the original somatropin,
which was extracted from human cadavers.
● Advise parents to monitor blood glucose closely in children with diabetes mellitus.
Parents should also be advised to report persistent severe abdominal pain, may be a symptom of pancreatitis.
● Emphasize need for regular follow-up with endocrinologist to ensure appropriate
growth rate, to evaluate lab work, and to determine bone age by x-ray exam.

Evaluation/Desired Outcomes
Child’s attainment of adult height in growth failure secondary to juvenile growth
hormone deficiency or idiopathic causes. Therapy is limited to period before clo-
sure of epiphyseal plates (approximately up to 14–15 yr in girls, 15–16 yr in boys).
Replacement of growth hormone in deficient adults.

Why was this drug prescribed for your patient?