Ectopic pregnancy: Epidemiology, risk factors, and anatomic sites

Dr Elaheh Amiri

INTRODUCTION

- Ectopic pregnancy is a pregnancy in which the developing blastocyst becomes implanted at a site other than the

- endometrium of the uterine cavity

RISK FACTORS

- The major cause of ectopic pregnancy is disruption of normal tubal anatomy from factors such as
- infection
- surgery
- congenital anomalies,
- Tumors
- functional impairment due to damaged ciliary activity
- Previous ectopic pregnancy
- Pelvic inflammatory disease and other genital infections
- Pelvic infection (eg, nonspecific salpingitis, chlamydia, gonorrhea), especially recurrent infection

RISK FACTORS

- Some data suggest that a history of chlamydial infection
- results in the production of a protein (PROKR2) that makes a pregnancy more likely to implant in the tubes
- Pelvic tuberculosis is not commonly associated with ectopic pregnancy. Most patients with pelvic tuberculosis have
- tubal damage reducing spontaneous conception. Even with in vitro fertilization (IVF), the pregnancy rate is low and the
- miscarriage rate is high

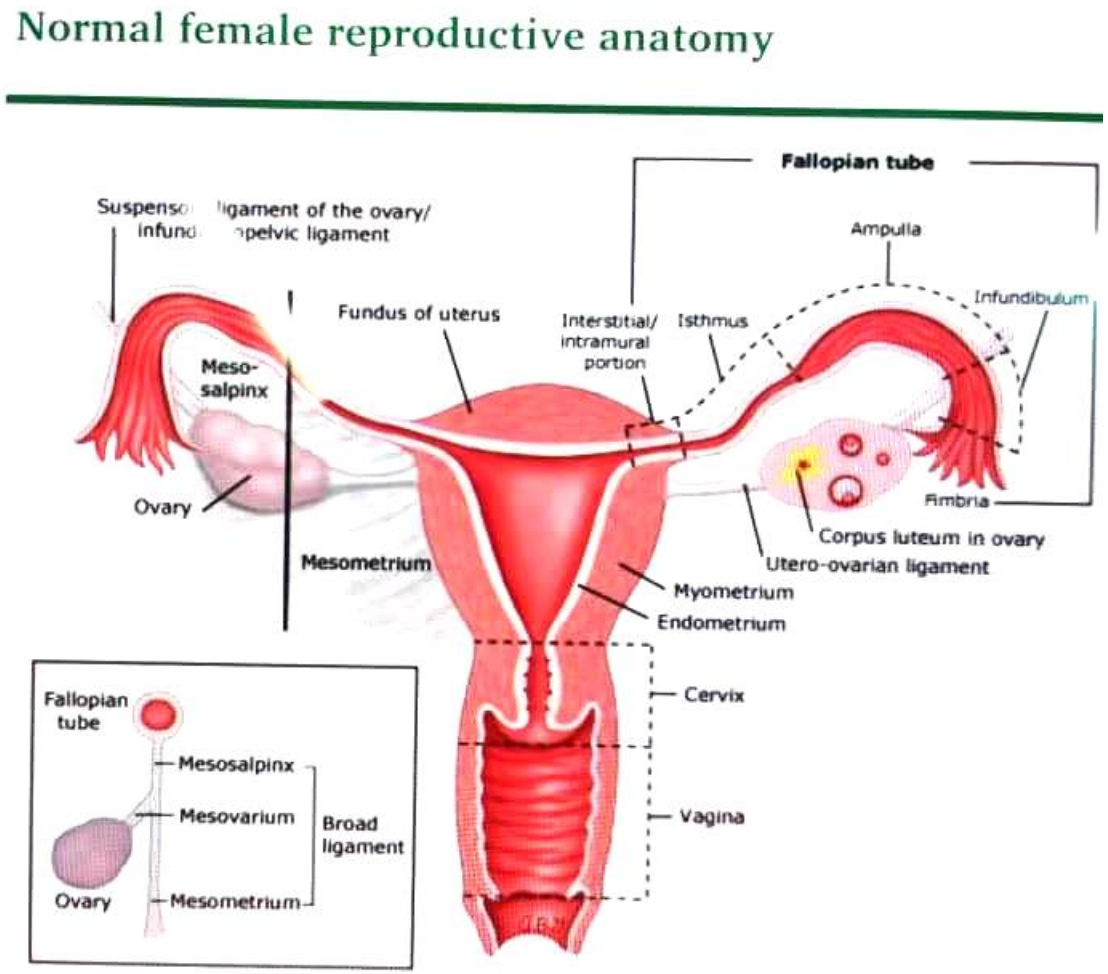
RISK FACTORS

- Infertility and related factors
- In vitro fertilization
- Tubal reconstructive surgery
- Other assisted reproduction methods
- Contraceptive methods
- Sterilization
- Intrauterine devices
- Estrogen/progestin contraceptives
- Progestin-only contraceptives
- Smoking
- In utero DES exposure
- Vaginal douching
- Increasing age
- Endometriosis

ANATOMIC SITES

- The great majority of ectopic pregnancies implant in the fallopian tube (96 percent)

ANATOMIC SITES



ANATOMIC SITES

- Interstitial or cornual pregnancy
- Rudimentary uterine horn pregnancy
- Angular pregnancy
- Abdominal pregnancy
- Cervical pregnancy
- Cesarean scar pregnancy
- Heterotopic pregnancy
- Ovarian pregnancy

Ectopic pregnancy:

Clinical manifestations and diagnosis

- Vaginal bleeding
- Abdominal pain

DIAGNOSIS

- The diagnosis of ectopic pregnancy should be suspected in a pregnant patient with no evidence of an intrauterine pregnancy on transvaginal ultrasound (TVUS) and any of the following:

- Visualization of a complex inhomogenous extraovarian adnexal mass, an extraovarian adnexal mass containing an empty gestational sac, or intraperitoneal bleeding on TVUS

- Abdominal pain and/or vaginal bleeding, especially in those patients with risk factors for ectopic pregnancy

DIAGNOSIS

- The diagnosis of ectopic pregnancy can be con?rmed when any of the following are present:

- Visualization of an extrauterine gestational sac with a yolk sac or embryo (with or without a heartbeat) on

- TVUS

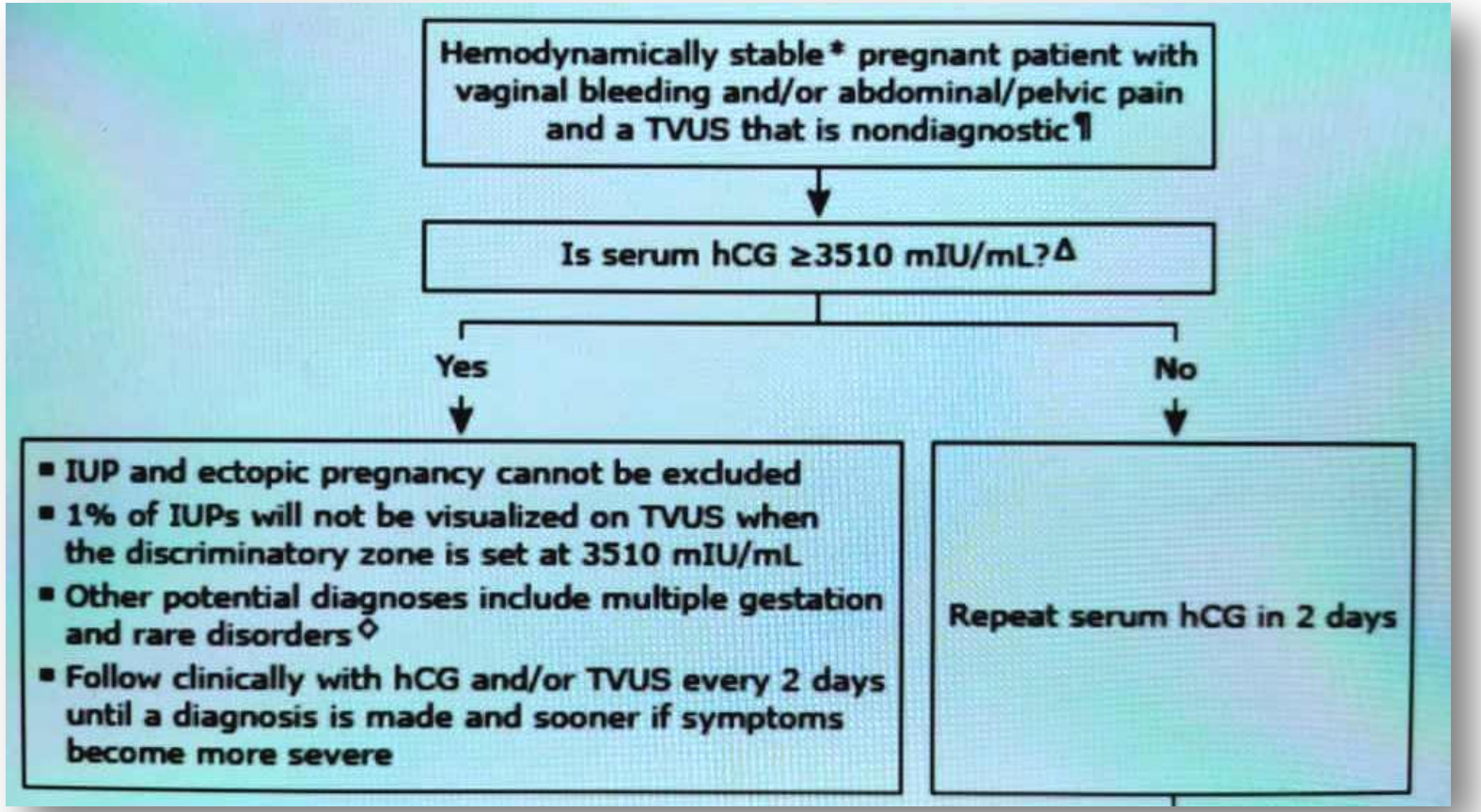
- A positive serum hCG and no products of conception on uterine aspiration with subsequent rising or plateauing hCG levels

- Visualization at surgery (usually performed for patients with hemodynamic instability) with histologiccon?rmation following resection of ectopic pregnancy tissue

DIAGNOSTIC EVALUATION

- Hemodynamically unstable patients
- Hemodynamically stable patients:
- Step one: History and physical examination
- Step two: Initial ultrasound and hCG
- Step three: Follow-up testing

DIAGNOSTIC EVALUATION



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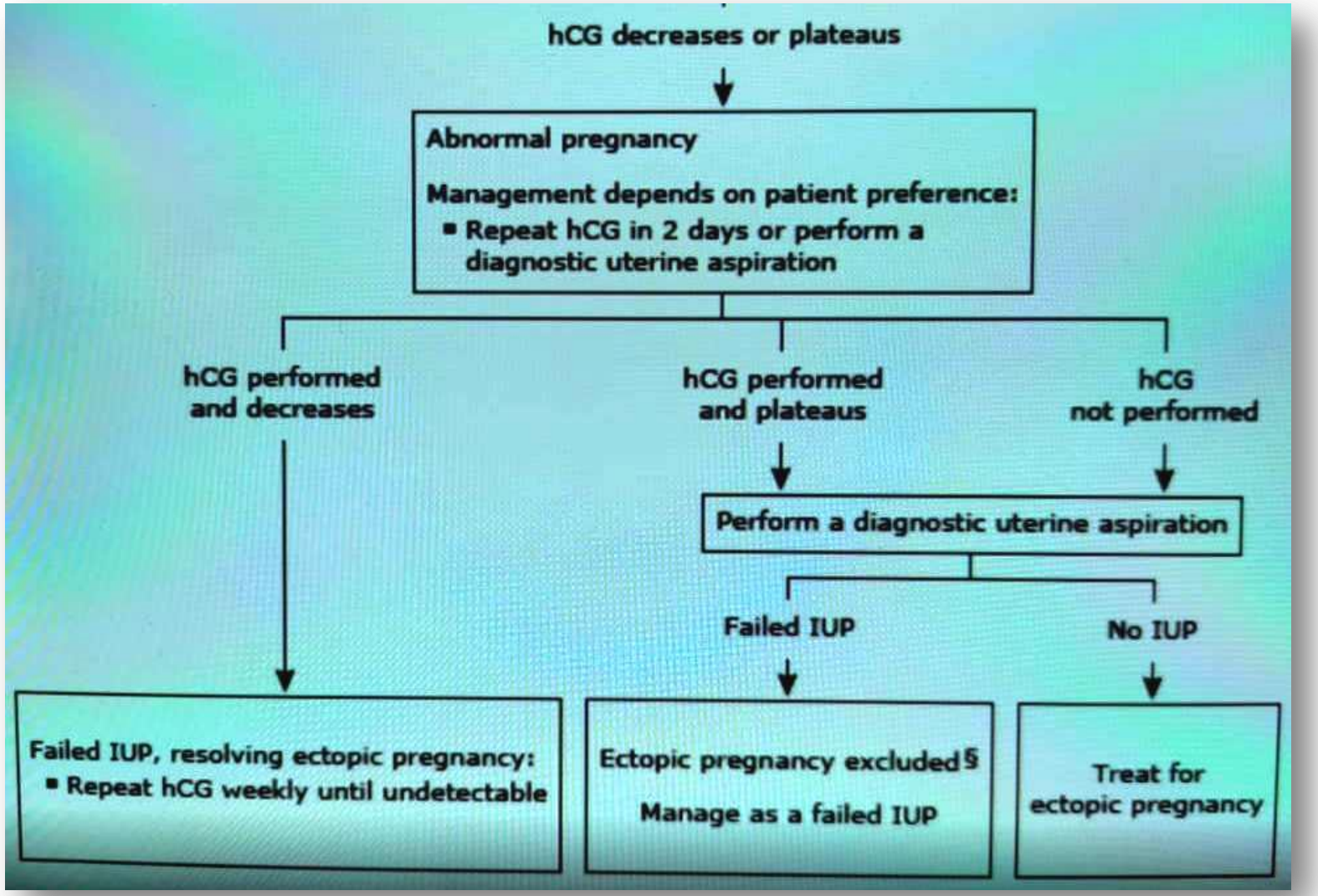

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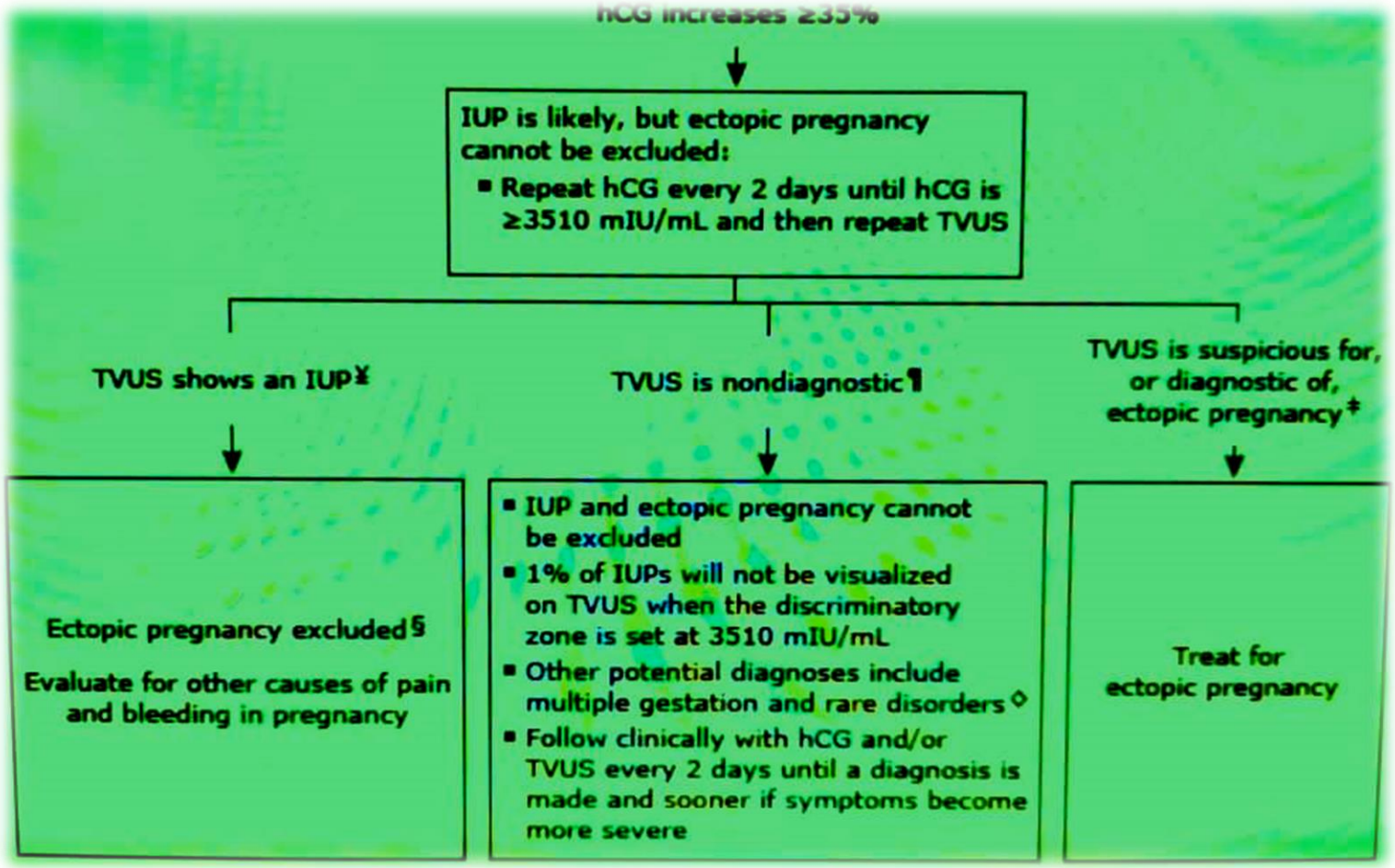

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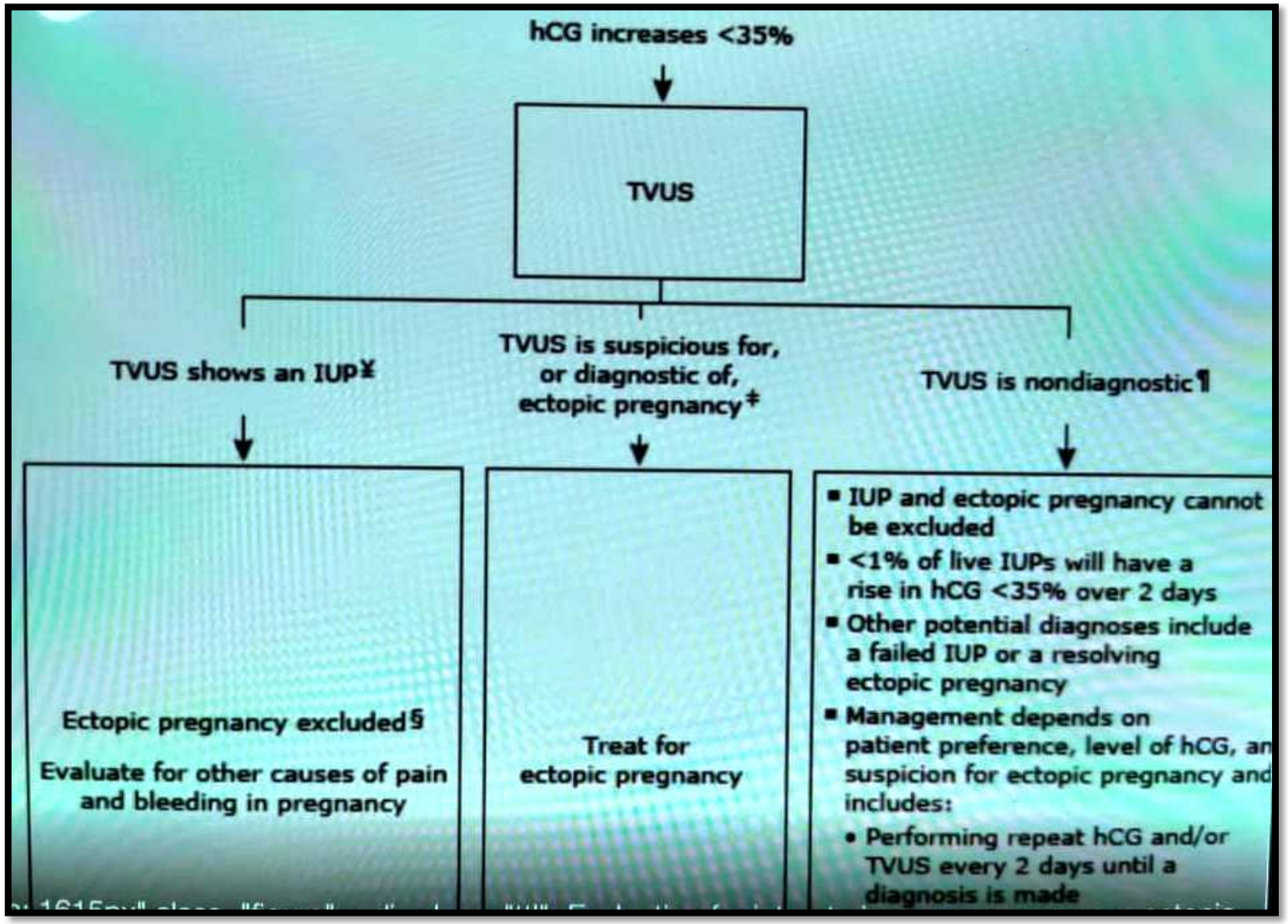

treatment

- Expectant management
- Medical therapy
- Surgical management

Methotrexate treatment protocol for tubal or interstitial ectopic pregnancy[1-3]

Pretreatment testing and instructions

- hCG concentration
- Transvaginal ultrasound
- Blood group and RhD typing; give anti Rh(D) immune globulin (Rho[D] immune globulin) 300 mcg IM, if indicated
- Complete blood count
- Liver and renal function tests
- Discontinue folic acid supplements
- Counsel patient to avoid nonsteroidal anti-inflammatory medications, recommend acetaminophen if an analgesic is needed
- Advise patient to refrain from sexual intercourse and strenuous exercise

Treatment day	Single-dose protocol	Two-dose protocol	Multiple-dose protocol
1	▪ hCG concentration ▪ Methotrexate 50 mg/m^2 BSA IM ▪ A calculator useful for determining BSA from patient height and body weight is available separately in UpToDate	▪ hCG concentration ▪ Give first dose methotrexate 50 mg/m^2 IM	▪ hCG concentration ▪ Methotrexate 1 mg/kg body weight IM or IV
2	–	–	▪ Leucovorin 0.1 mg/kg IM
3	–	–	▪ hCG ▪ If <15% hCG decline from day 1 to 3, give methotrexate 1 mg/kg IM or IV ▪ If ≥15% decline from day 1 to 3, begin weekly hCG
4	▪ hCG	▪ Give second dose methotrexate 50 mg/m^2 IM	▪ Leucovorin 0.1 mg/kg IM*
5	–	–	▪ hCG ▪ If <15% decline from day 3 to 5, give methotrexate 1 mg/kg IM or IV ▪ If ≥15% decline from day 3 to 5, begin weekly hCG
6	–	–	▪ Leucovorin 0.1 mg/kg IM*
7	▪ hCG ▪ If <15% hCG decline from day 4 to 7, give additional dose of methotrexate 50 mg/m^2 IM ▪ If ≥15% hCG decline from day 4 to 7, draw hCG concentration weekly until hCG is undetectable	▪ hCG ▪ If <15% decline, give third dose methotrexate 50 mg/m^2 IM ▪ If ≥15% decline, begin weekly hCG	▪ hCG ▪ If <15% decline from day 5 to 7, give methotrexate 1 mg/kg IM or IV ▪ If ≥15% decline from day 5 to 7, begin weekly hCG
8	–	–	▪ Leucovorin 0.1 mg/kg IM*
11	–	▪ hCG ▪ If <15% decline, give fourth dose methotrexate 50 mg/m^2 IM ▪ If ≥15% decline, begin weekly hCG	–
14	▪ hCG ▪ If <15% hCG decline from day 7 to 14, give additional dose of methotrexate 50 mg/m^2 IM ▪ If ≥15% hCG decline from day 7 to 14, check hCG weekly until undetectable	▪ hCG ▪ If <15% decline, consider surgery ▪ If ≥15% decline, check hCG weekly until undetectable	▪ hCG ▪ If <15% hCG decline from day 7 to 14, give additional dose of methotrexate 1 mg/kg IM (give leucovorin 0.1 mg/kg IM on day 15) ▪ If ≥15% hCG decline from day 7 to 14, check hCG weekly until undetectable
21 and 28	▪ If three doses have been given and there is a <15% hCG decline from day 21 to 28, proceed with laparoscopic surgery	–	▪ If 5 doses have been given and there is a <15% hCG decline from day 14 to 21, proceed with laparoscopic surgery

Thanks a lot