

1 Identification and Management of the “AT RISK” Pregnancy

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2 High Risk Pregnancy

- Increase potential for death or disability of either the mare or the fetus
- Identification can be difficult
- May have to decide if health of mare is more important than that of the fetus
- Premature foals are difficult and expensive

3 Factors that Negatively Influence Outcome of Pregnancy

- Type and severity of disease
- Stage of gestation in which disease occurs
- Persistent or multiple occurrences
- Age and health status of mare

4 Conditions Causing a High Risk Pregnancy

- Colic
- Uterine Torsion
- Uterine Rupture
- Ruptured Prepubic Tendon
- Uterine Artery Rupture
- Systemic Illness or Injury
- Pelvic Fracture

5 Conditions Causing a High Risk Pregnancy

- Placental problems
 - Infection
 - Hydrops
 - Insufficiency
- Consumption of fescue grass or hay during pregnancy
- Twins
- Dystocia

6 Evaluation: Reproductive History

- Prior uterine infections
- History of abortions, twins, or dystocia
- Prior reproductive or abdominal surgery
- Problems with previous foals
- Breeding management
- Exposure to infectious diseases
- Vaccination history
- Diet

7 Physical Examination

- Complete examination
- Reproductive evaluation

- Rectal palpation of reproductive tract
- Rectal ultrasound of reproductive tract
- Transabdominal ultrasound
- Vaginal speculum examination
- Culture of vaginal discharge if present

8 Physical Examination

- Mammary gland development
- Presence of premature lactation
- Fetal examination with
 - transabdominal – transrectal U/S
 - Fetal activity
 - Fetal heart rate
 - Presence of twins
 - Uteroplacental thickness, contact
 - Placental fluid depth and characteristics
 - Hydropic Conditions

9 Laboratory Analysis

- Complete blood count
- Serum chemistry analysis
- Hormone profiles
- Serum antibody titers for infectious diseases

10 Fetal Activity

11 Fetal Heart Rates

- Resting - average of 2 – 3 rates obtained
- As gestation progresses rates decrease
- Baseline 60 – 92 bpm = normal range
 - Variability 7 - 15 bpm
- Should be reactive to stimuli
- Elevated rates or increased ranges may indicate fetal stress
- Bradycardia indicates fetal hypoxia

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14 Twins

- Leading cause of abortion in mares
 - 85% abort during mid-to late-gestation
- Most originate from the ovulation of two follicles, and both are fertilize
 - Same day ovulations or several days apart
- Breeds with high incidence of multiple ovulations
 - Thoroughbreds
 - Warmbloods
 - Draft horses

15 Twins

- Early detection of twins is important to prevent a high risk pregnancy
 - 14-16 day pregnancy check

- Can manually reduce one of the embryos and maintain the other one if done before day 20
- Natural reduction often occurs between days 14 and 40 if they are in the same horn

16 **Twins**

17 **Twins**

- Abort both fetuses before day 32 with PGF2 α if natural reduction has not occurred or if in different uterine horns
- After day 32-35, endometrial cups have formed and mare will not return to estrus after PGF2 α administration
 - More difficult to abort
 - Loss of breeding season

18 **Twins**

- Twins diagnosed during mid- to late-gestation are difficult to manage, expect to lose both foals
 - Watch mare closely and provide supportive care for her
 - Premature lactation may occur

19 **Placentitis**

- Bacterial or Fungal infection in the placenta
- Spread to placenta from cervix
- Acute infection spreads rapidly and fetus usually dies and abortion occurs
- Chronic infections spread slowly and often localized at cervical star
 - Placental insufficiency occurs, abortion or small emaciated fetus

20 **Placentitis: Clinical Signs**

- Cervical or Vaginal discharge
- Premature lactation
- Thickening of uterus and placenta on transrectal or transabdominal ultrasound
- Definitive diagnosis made by examination of fetus, placenta, and mare after an abortion or parturition

21 **Placental Health**

Combined Thickness of Uterus and Placenta (CTUP) or Utero-Placental Thickness (UPT)

22 **Utero-Placental Thickness (UPT)**

- Transrectal Assessment
 - at the level of the cervical star
- Transabdominal Assessment
 - Avoid fetal compression and placental folds
- > 2 SD above normal range would be of concern that placental pathology exists

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24 **CTUP Rules of Thumb**

- If CTUP is over these values there could be room for concern
 - Up to gestational day 270 > 7mm
 - Day 271 – 300 > 8 mm

- Day 301 – 330 > 10 mm
- Day 331 – term > 12 mm

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26 **Placentitis: Prevention and Treatment**

- Strict cleanliness at breeding and elimination of any endometritis after breeding
- Systemic antibiotics and NSAIDs
- Progesterone??
- Tocolytic - Clenbuterol (β_2 -Agonist)
- Stall rest or small paddock, reduce stress and movement

27 **Fescue Toxicosis**

- Tall fescue grass infected with an endophyte fungus
- Prolonged gestation
- Agalactia
- Premature separation of placenta (Red bag)
- Thickened placenta, placental insufficiency

28 **Fescue Toxicosis**

- Dystocia
- Stillborn or weak foals
- Retained placentas
- Poor post-foaling reproductive performance

29 **Fescue Toxicosis**

- Remove pregnant mares from fescue pasture and do not feed fescue hay as early as possible in gestation
- Insufficient mammary gland development can be treated with Domperidone
 - 7-10 days prior to foaling date
 - 7-10 days after foaling, must supplement foal until milk production occurs

30 **Rupture of Prepubic Tendon and/or Ventral Abdominal Muscles**

- Prepubic tendon attaches the ventral abdominal muscles to the pelvis
 - Rupture of one or both occurs in late term pregnant mare
- Most common in older, multiparous mares
- Occurs spontaneously or secondary to trauma, added weight of twins, placental hydrops, or severe ventral edema

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32 **Rupture of Prepubic Tendon and/or Ventral Abdominal Muscles**

- Treatment: body wall support wrap, analgesics
- Decide if survival of mare or foal is most important
- If at term
 - induction or C-Section is indicated
- Assistance in foaling is required because mare cannot produce good abdominal

contractions

- 33 **Rupture of Prepubic Tendon and/or Ventral Abdominal Muscles**
- If not at term, risky to mare and foal to attempt continuation of pregnancy
 - Mare unlikely to carry a foal to term again
 - Prognosis for survival without intervention is very poor
- 34 **Placental Hydrops**
- Rare condition of excess fluid accumulation within the allantoic cavity or amniotic cavity during late pregnancy
 - Rapid enlargement of abdomen over 7-14 days, colic, severe ventral edema, labored breathing, reluctance to move, recumbancy
 - Treatment is to abort the pregnancy to save the mare
- 35 **Colic During Pregnancy**
- Usually secondary to a gastrointestinal or uterine abnormality
 - Some episodes may require intensive medical and or surgical management
 - Prognosis for mare is similar to a non-pregnant animal, but may be more likely to abort depending on cause and duration
 - Abortion may occur during episode of several weeks later
- 36 **Hemorrhage During Late Pregnancy**
- Rupture of large uterine blood vessel
 - Older, multiparous mares
 - Can cause fatal blood loss
 - Colic, sweating, rapid pulse, anemia
 - Rapid treatment necessary
 - Premature separation of placenta
 - Volume of blood is not significant
 - Risk to fetus difficult to determine
- 37 **Hemorrhage During Late Pregnancy**
- Rupture of a blood vessel located in vagina
 - Vaginal varicose veins often found in older mares, most prominent during pregnancy and estrus
 - Vaginal speculum examination
 - Blood loss usually not severe and treatment is not necessary, regress after pregnancy/estrus
 - Surgery if persistent or severe
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