Dr. Boglárka VINCZE – Dr. Ottó SZENCI:

# The technique and findings of ultrasonographic assessment of fetal well-being in Lipizzaner mares in a Hungarian stud farm (2013-2015)

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„I can make a General in five minutes but a good horse is hard to replace”

*A. Lincoln*

# Introduction 1.

- Why do we evaluate late-term pregnancy?
  - transabdominal US - human and equine obstetrics
  - useful diagnostic tool for well-being in the mare and fetus
  - assessment of fetal well-being is the first step towards decreasing perinatal morbidity and mortality

# Introduction II. Indications

- Maternal, fetal, placental factors
  - Vaginal discharge
  - Premature lactation
  - Systemic disease of the mare
  - Recent (colic) surgery of the mare
  - Abnormal abdominal shape
  - Complications during past pregnancies

**High risk pregnancy**

# Technique

- Patient preparation
  - Sedation (*detomidin hidrochloride*)
  - Restraint (stock, twitch)
  - Cutting/clipping?
- Ultrasound equipment
  - Two types of transducers (high,low frequencies)
    - 2,5-3,5 MHz: fetus
    - 5-6(10) MHz: uteroplacental unit
  - diluted propanol/gel or combination
  - Setting (depths, gain,…)

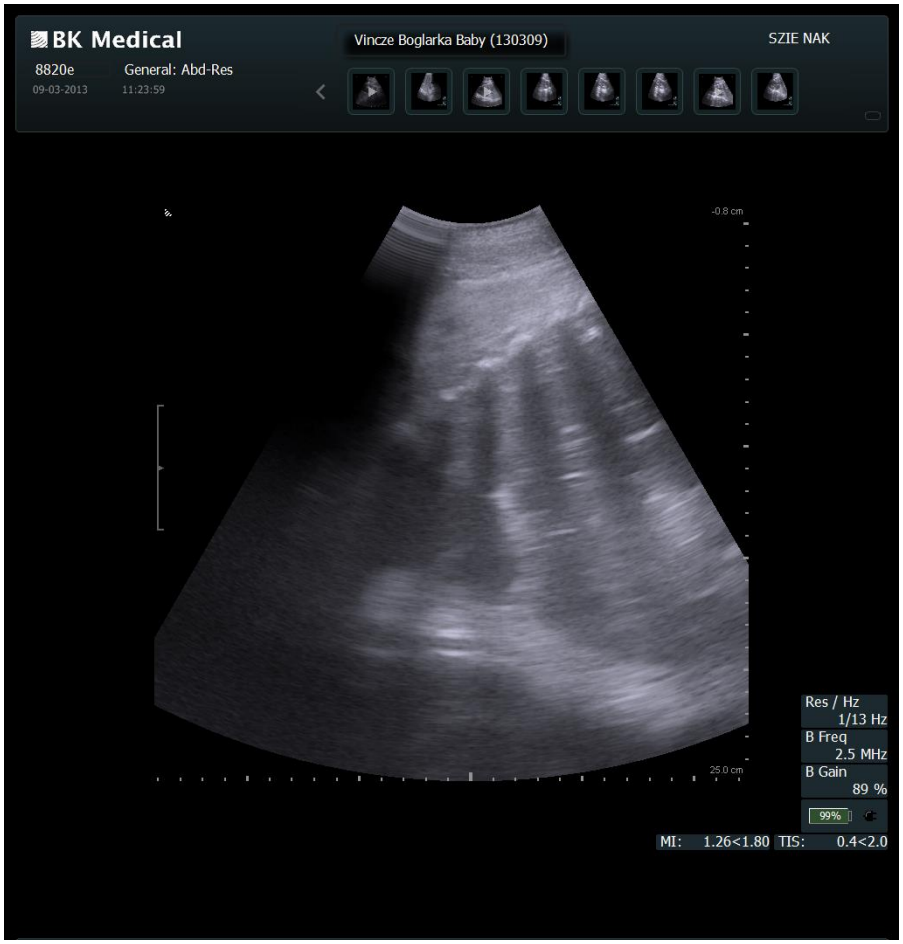
# Examination

- Fill in a form for pregnant mares- anamnesis!
- Save the findings
- Place to start: ventral abdomen
  - 1st trimester-near mammary gland
  - 2nd and 3rd trimester - between proc.xyphoideus and mammary gland

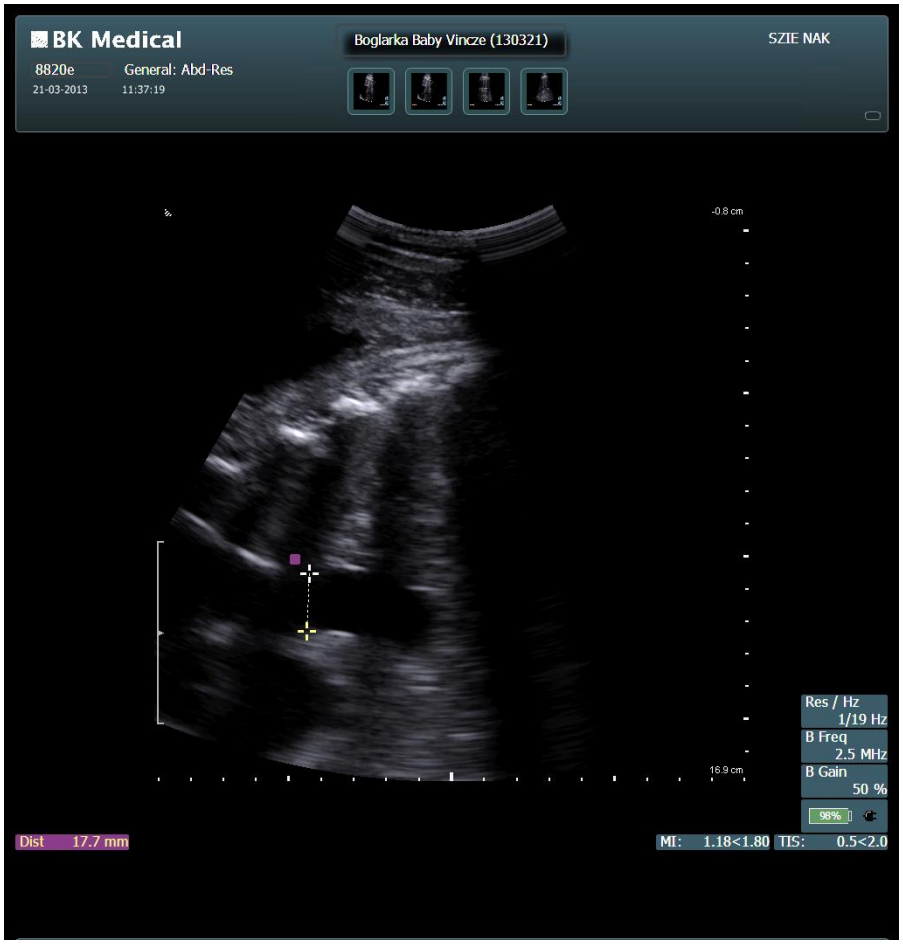
1.initial goal: find the fetus, detect location

  - Fetal activity and tone, twins?

# Fetal thorax and heart

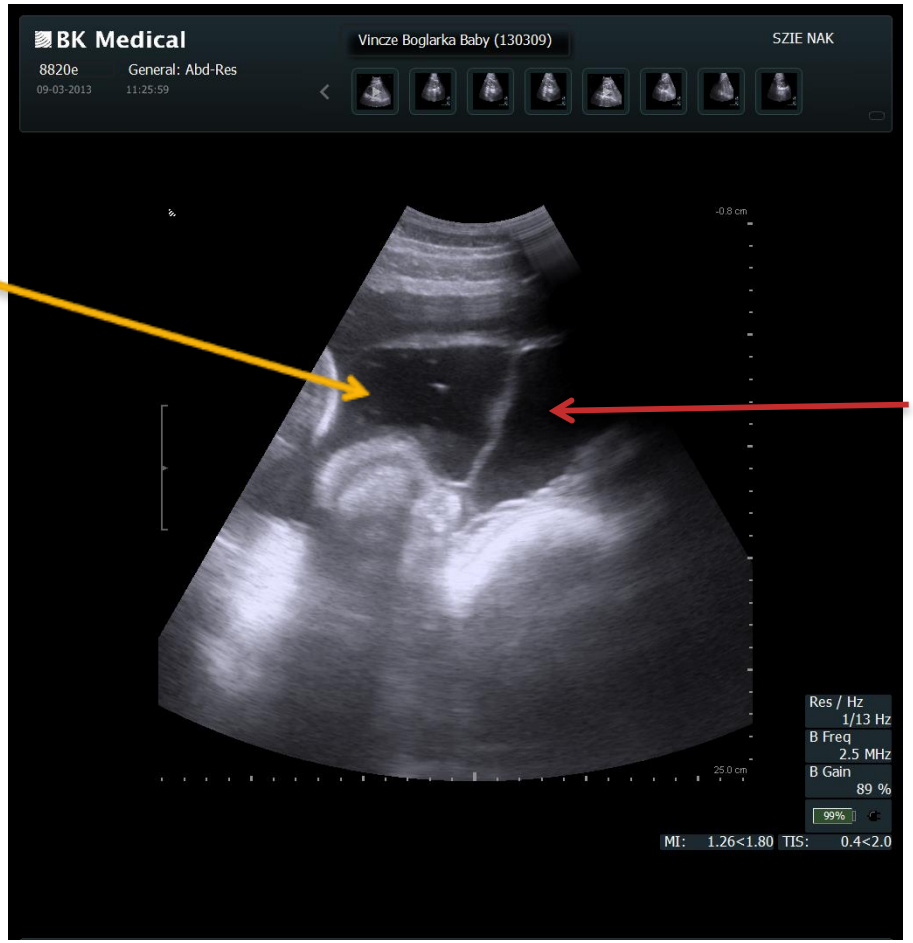


# Fetal aorta, fetal heart rate



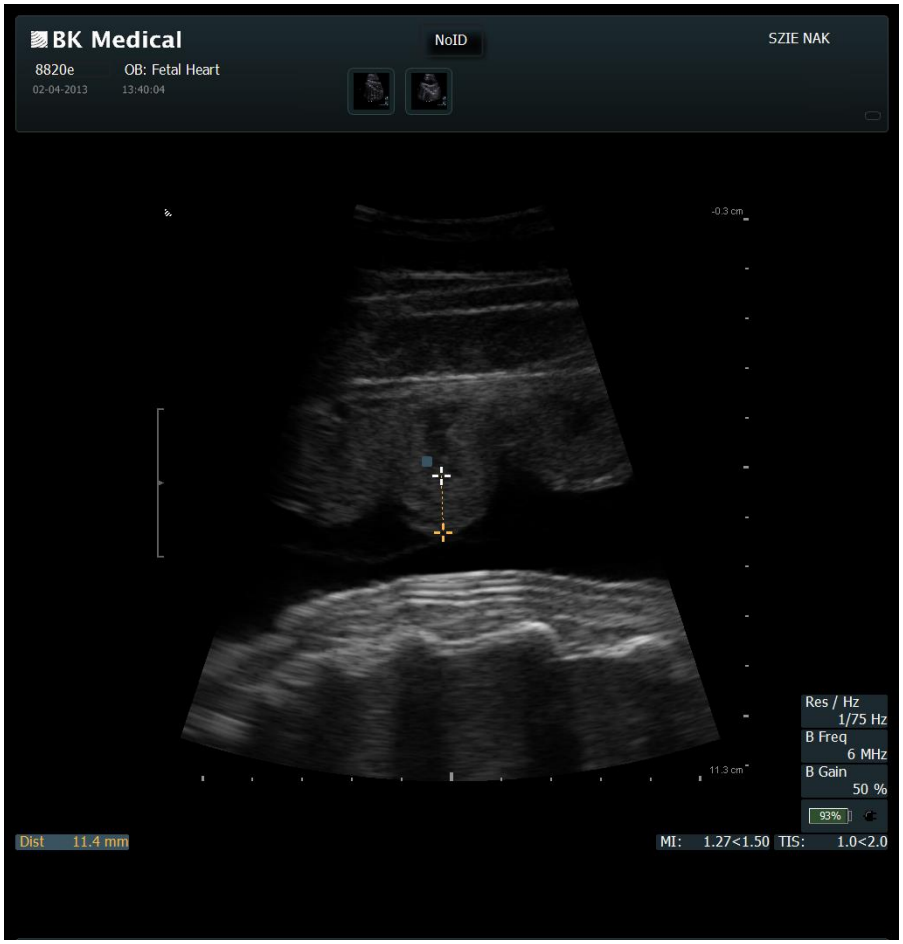
# Allantoic and amniotic fluid

Allantoic fluid with debris




Amniotic fluid

# CTUP (combined thickness of uteroplacental unit)



# Umbilical cord

# Our study

- 35 Hungarian Lipizzaner broodmares
- Late term pregnancies (270-315 days)
- 2,5-5 MHz macroconvex probe
- Data collected
  - Fetal heart rate (FHR)
  - Aortic diameter (Ao)
  - Combined thickness of the uteroplacental unit (CTUP)
  - Birth weight (BW)
- Statistical analysis-R Software
- Postpartum data

# Our results

| Parametre | Reference value* (>300days) | Average (study) |
|---|---|---|
| FHR bpm | 61-85 | **89±11** |
| Movement, activity (0-3) | 1-3 | 2,6 |
| Aortic diametre (mm) | 18-27 | 18±2 |
| CTUP (mm) | 6-16 | 8,1 |
| Birth weight (kg) | - | 48,6±6,8 |

- 34/35 single, one twin pregnancy (with placentitis)

*Reef et al 1998

# Conclusions

- Transabdominal US …
  - … can be performed under clinical and stud farm conditions
  - … gives useful information about fetal well-being, but more maternal parameters should be included
  - The rapid fetal examination can be performed on the field (stud farm)
- The understanding of normal fetal and maternal structures will help us to identify the high-risk neonate and to decrease mortality and morbidity

„Be careful about reading health books.You may die of a misprint.”

*M. Twain*

# Thank you for your attention!