Project
IgG identification in BNP dams

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What we know so far?

• BNP is a very specific diagnosis:
  – Day 0-30
  – Hemorrhages (external, but also internal...)
  – Panleucopenia (if alive)
  – Medullar aplasia (dead or alive)
  – BVD Ag negative
  – DIVC excluded

• Theron et al., Pardon et al., Schelcher et al. Etc...
Possible etiology

- Presence of a specific IgG in the colostrum

Epidemiology:
  - No Significant difference:
    - Sex ratio
    - Specific breed
    - Parity
  - Significant factors:
    - Calf age cluster
    - Previous case on the dam
    - Presence of BVD vaccination
Possible etiology

• Presence of a specific IgG in the colostrum

• Immunological findings
  – PBMC are IgG recognized by dam sera
    • Pardon et al, Bridger et al., Bastian et al.
  – Cell lines used for Pregsure preparation are reactive to alloantigens
  – A role of the Pregsure adjuvant is sought

• ... What about non Pregsure cases...
Epidemiological findings about BVD vaccination

• Most studies report 90-100% Pregsure vaccinated dams

• Our case log:
  – 22-24% of non Pregsure, non BVD calves
  – Last case: Muccobovin true BNP, no cells countable in Cell-dyn...
Project

1. Cases recruiting
   a) Dams sampling
   b) Positive dams serum isolation for inoculation
   c) Epidemiological database

2. Biological test
Case recruiting

• 50 cases, 28 in Wallonia
  – Currently, unifying 3 databases (ARSIA, Pathology)
  – Complete examination revealed other BNP-like syndromes like DIVC

• 10 mothers were able to be recruited
  (alive, colostrum given, calf confirmed)
  – focused on non Pregsure dams, which colostrum had been given to the calf
Age, Sex and Breed

Age (N=28; Mean = 14.5)

Number

Age (day)

All

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<tr>
<th>Breed</th>
<th>F</th>
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<tr>
<td>Total</td>
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<td>21</td>
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Wallonia

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<th>M</th>
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<tr>
<td>Total</td>
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<td>12</td>
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Breed

- BBB 43%
- PNH 36%
- Croisé charolais*BBB* Blond 3%
- BBBX 11%
- HPR 4%
- Blond 3%
- Blonde 3%
Vaccination and Colostrum status

BVD Vaccination of Liege caselog (n=50)

- Muccobovin: 58%
- NON: 16%
- Pregsure/Rsipoval après 2009: 2%
- Pregsure: 2%
- Pregsure genisses: 2%
- Pregsure (2 ans): 2%

BVD Vaccination of Walloon Cases (n=28)

- Muccobovin: 43%
- NON: 21%
- Pregsure: 4%
- Pregsure (2 ans): 4%
- Pregsure genisses: 29%
- Pregsure (2 ans): 8%

Wallonia

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<th>BVD vaccine</th>
<th>Other</th>
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<tr>
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Dam serum analysis

• Recruit of 10 dams
  – 3 control negative BVD Ac
  – 7 BNP-dams
    • 3 Pregsure +
    • 4 Non-Pregsure

• Inoculation on Calf Lymphocytes isolated
  – Use of Sheep anti IgG-FITC
  – Comparison with Rabitt FITC
  – FACS
Preliminary results

Experiment Name: BNP-dams 1
Specimen Name: Exp 13072011
Tube Name: Control dam
Record Date: Jul 13, 2011 3:15:54 PM
$OP$: Exterieur
GUID: a6fe295c-e6b6-4c34-af15-e48c1ff1eba9

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Pregsure dams

Exp 13072011-Control dam

Exp 13072011-BNP dam 3d

Exp 13072011-BNP dam 3 A2

Exp 13072011-BNP dam 5
Non pressure Dams
Extremes

Non Pregsure cow, Vaccinated with Muccobovin© (Merial)

Pregsure© cow, had 2 BNP Calves
Discussion

• Is truly Pregsure the problem?
  – There’s a tendency in litterature showing that most Pregsure+ BNP-dams had alloantibodies
  – Other animals have the same tendency
  – Few sera tested

• Other issues:
  – Tested each of the 4 calves bought for the in vivo experiment
  – Answer changing...
Conclusion

• Recruitment bias?
  – 10% of calves die in 0-30 day interval...
'I admire above all your enlightened modesty. The more you know, the less you affirm. You do not resemble those physicians who put themselves in God's place and create a world with words. Through your experience, you have opened a new field; you have rendered society true service: that is the right physik.'

Voltaire