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Reduction of antimicrobial use and resistance: any other options than reducing triggers for bacterial disease?

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Prudent and Responsible Use of Antimicrobials
in Veterinary Medicine
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Introduction

- ➞ Various measures detailed by previous speakers
- ➞ Certain countries implemented limits for prescription
- ➞ Certain classes of antimicrobials accused/warnings
- ➞ Prudent Use guidelines published, implemented?
- ➞ Re-Registration done, limitations on SPCs, ↑ Prices
- ➞ Trainings and increased awareness of vets
- ➞ Research on „Antimicrobial Resistance“ (methods, genes)
- ➞ AM-Resistance surveys performed in EU countries
- ➞ On the „veterinary“ field a lot of efforts done, at least as much as in the „human“ medical field
- ➞ BUT : Increased use of Antimicrobials in Animals

SUMMARY of recent evaluations

- ⇒ Any use of antimicrobials selects for antimicrobial resistance (EFSA, SAGAM)
 - Increased scientific database
 - Not certain classes more guilty than others
 - Improved diagnostic requirements in certain countries
- ⇒ Did we take the correct measures?
- ⇒ Do we need to re-assess the approach?

Expectations from Measures

➞ More Responsible Use

- Legal: Re-registration, Prescription only, SPC warnings
- Voluntary: various guidance documents, training of vets, increased awareness of consumers, farmers? and veterinarians

➞ More Accurate Use

- Increased use of „better“ diagnostics
- Narrow spectrum antimicrobials
- Individual animals rather than herd treatments
- Dosing in mg/kg (rather than ppm)
- Narrow claims, warnings on SPCs
- Reduced number of products on the market (re-registration)

➞ Less use

- Ban of antimicrobial feed additives
- Increased requirements to feed mills
- Warnings on SPC, reduced number of products/claims, PRICE

Animal Production in last decade

➔ More Animals and Larger Farms

- Swine and Dairy ↑
- Cattle, Sheep ↓
- Poultry ↑

➔ Ever more specialisation per farm: ↑ transport/stress

➔ More and new diseases: examples:

- Swine: PCV2, PRRSV, Lawsonia, Strep. suis, H. parasuis
- Poultry: Influenza, Dysbacteriosis (necrotic enteritis), E. coli
- Dairy: More E. coli and Strep. uberis, less „Strep. agalactiae“

➔ Major contributors by claim:

- Respiratory Disease: SRD, BRD, Colibacillosis in chicken
- Enteric Disease: E. coli, Brachyspira, Lawsonia, Clostridia
- Mastitis/Metritis (cow/sow): Dairy: low cell counts



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PCV2

Why increased use of AM?

- ➔ Number of sick animals did not change because of guidelines, but changed due to ban of AM feed additives and „new“ diseases (Swine: PCV2, Lawsonia, Brachyspira, Clostridia, PRRS/ PCV2, more Strep. suis, H. parasuis etc.)
- ➔ Transport of animals has increased: ‚Crowding‘ is major trigger of respiratory disease in all species!
- ➔ Specialisation of farming has increased: even more transport/crowding of animals of different origin, more stress by increased specialisation and ever higher productivity objectives

Why increased use of AM?

Enormous Economic Pressure

➔ Example: Large Integrater introduces new prices:

- Implementation of „consultation fee“: 20€/m²
- At same time reduction of prices for well-known antimicrobial by 50 % (90€ to 50€)
- Argument: same price better value:

➔ Reaction of Farmer:

- Took price to find vet, who sells product to reduced price, and also no „consultation fee“
- Gets product from swine vet: documentation as treating swine (but put into turkey)



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Avian Influenza Risk?



Broiler Production



Transport throughout EU and globally

Are expectations right?

⇒ AM used per SPC: in sick target animal species?

- Yes!
- Although cheap, still very important cost factor for production
 - Good farm: 1 € vet costs per swine
 - Bad farm: 5 € vet costs per swine, PCV2: up to 15€
- Prescription only in EU countries, but ...

⇒ AM used per label?

- Probably yes for „general“ indication (SRD, BRD)
- Misuse (low dose? Compliance (dose?)? (COST!))
- Warnings on SPCs are relative:
 - To save life of animal(s) is more important for vet
 - Immediate availability given?
 - Paper is patient! Ever more „paperwork“, instead of vet science?

Practical Problems?

➡ Correct dosing of larger herds

- Have we got all doses right?
- Feed and water medication: reduced intake of sick animals
- Technical problems: water pressure, accurateness of pumps

➡ Cross Contamination

- At farm and feed mill
- selection pressure for resistance

➡ Restricted possibilities for diagnostics in many countries!

- No pathology possible on farm/practice, distance to licensed pathology rooms often >100 km
- Authorities avoid to have p-m rooms in own district! (Inf. Disease)
- Results available only 2 to 5 days post sampling! Value?
- Reduced use of diagnostics (value, cost, structure)

Contributors to increased disease and use of AM

⇒ Swine: PCV2 and PRRSV spread across Europe

- Huge losses for swine production
- In order to limit losses, increased use of AM
- Late introduction of vaccines (now showing good effect)

⇒ Low transport costs and increased trade

- Crowding of animals increased by free trade (EU)
- Long transport of animals increases likelihood of Resp Disease

⇒ Increased specialisation of production

- Reproduction: 4 weeks until weaning
- 12 weeks: flat decks
- 15 weeks: fattening. Nowadays up to 6 changes of management, usually 3-4!

⇒ Cheap prices of antimicrobial products



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How do we achieve
less bacterial disease
to reduce AM
resistance?



➔ IMPROVE

- **Awareness of Antimicrobial Resistance**
- Training for vets, farmers and pet owners
- Research and Evaluations (Genetics, breeding)
- Improve diagnostic options throughout EU (every vet should have pm rooms available: e.g. UK)
- Accurateness of dosing through water and feed
- Collaboration with „human“ colleagues

➔ INCREASE

- Increase research dedicated to relevant diseases (ETPAH: major current diseases not prioritised): Strep. suis vaccine?
- Practical/faster diagnostic tools
- Support breeding options

➔ REDUCE Antimicrobial Use

- Time to market of new vaccines, if no safety concern! (PCV2: 11y)
- Cost attractiveness of using Antimicrobials: Do we need low cost products of highly potent Antimicrobials?

CORE is to REDUCE BACTERIAL DISEASE

- Limit transport, major cause of stress causing disease
- Finance up to date housing incl. technique
 - Ventilation, light regimen, floor, bedding
- Improve farm management, avoid overstocking, improve feed
- Implement EU requirements on animal welfare/hygiene: insist on this!
- Limit use of antimicrobials on farms!
- Support availability and use of vaccines



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We believe:

- The problem is on the farm and under the owners control, even if under prescription
- We need antimicrobials for the future
- We need various classes of antimicrobials
- We need oral formulations for herd treatment
- We need to increase research
- We must take appropriate action to reduce disease to reduce use of antimicrobials
- Make use unattractive compared to alternatives!



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THANK YOU for inviting AVC

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