SEASONAL PREVALENCE AND ANTIBIOTIC SUSCEPTIBILITY OF BACTERIAL INFECTIONS IN CANINE CORNEAL ULCERS

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Purpose

To evaluate differences in prevalence and antibiotic susceptibility of bacteria present on canine corneal ulcers between warmer and colder seasons in a veterinary ophthalmology clinic in Germany.

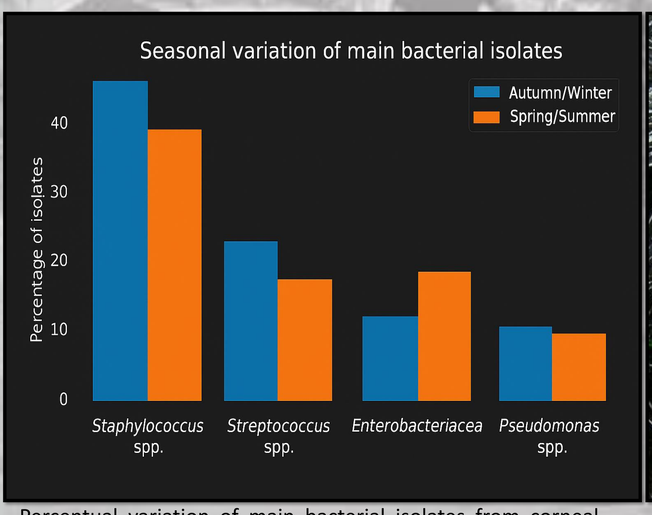
Materials and Methods

Retrospective study: 117 corneal ulcers from 112 dogs (Berlin, Germany; May 2021 – June 2024)
Bacterial identification: MALDI-TOF
Antibiotic susceptibility testing: Minimum Inhibitory Concentration (MIC)

Results

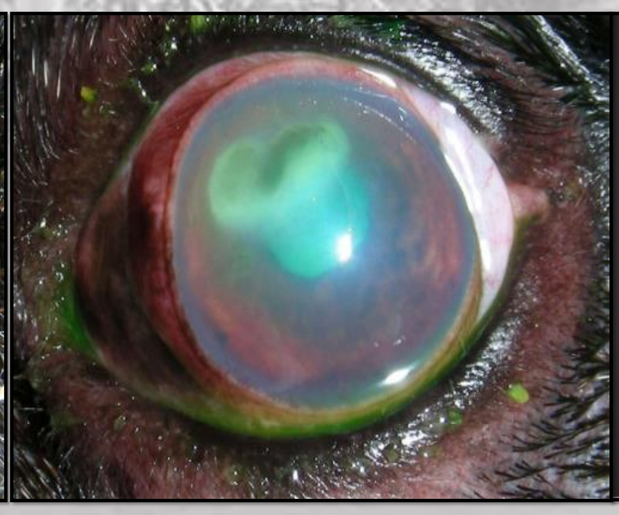
- **Autumn/Winter (49 ulcers)**
  14.3% melting ulcers
  91.8% positive cultures
  Main agents*: Staphylococcus* spp. (46.7%), β-hemolytic *Streptococcus* (22.2%), Enterobacteriaceae (11.1%), *Pseudomonas* sp. (8.9%)
- **Spring/Summer (68 ulcers)**
  23.5% melting ulcers
  92.6% positive cultures
  Main agents: *Staphylococcus* spp. (39.7%), Enterobacteriaceae (19.0%), β-hemolytic *Streptococcus* (17.5%), *Pseudomonas* sp. (7.9%)
  - **Antibiotic susceptibility**

  No significant differences between seasons
  - **Multidrug-resistant infections** more frequent in spring/summer **(33.3%)** vs autumn/winter (18.6%), p=0.095

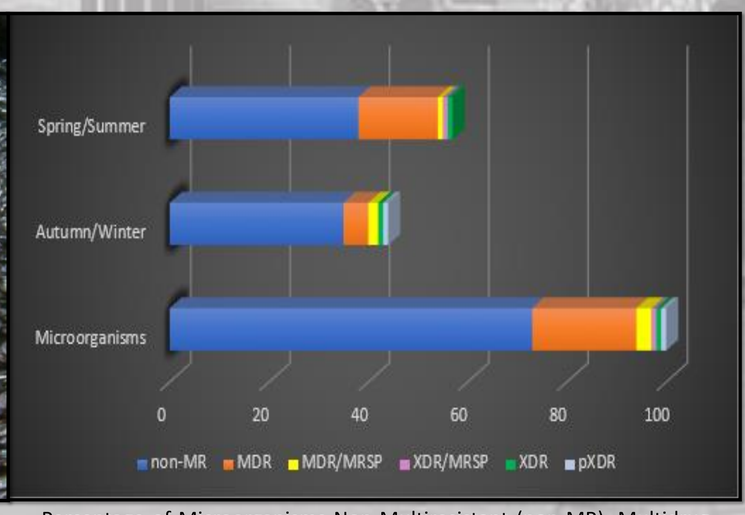


Percentual variation of main bacterial isolates from corneal ulcers during warmer and colder seasons (Berlin, May 2021 – June 2024)

Deep chronic melted corneal ulcer with small central descemetocele



Infected stromal corneal ulcer



Percentage of Microorganisms Non Multiresistant (non-MR), Multidrug Resistant (MDR), Multdrug-resistant *Staphylococcus pseudintermedius* (MRSP), Extensively drug-resistant (XDR) and Probably XDR (pXDR)

Discussion

- Multidrug-resistant infections were common → highlights the importance of culture and antibiotic susceptibility testing
- Climatic conditions may influence bacterial prevalence and resistance, leading to severe ulcers
- Observed seasonal trends were not significant diferent→ further large-scale studies are needed

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