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Epidemiology of joint injuries in Thoroughbreds in training

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Joint injuries

- Important cause of lameness in young racehorses in training
- Broad spectrum of clinical signs resulting from varying degrees of damage to cartilage and/or bone
- Progressive damage results in chronic lameness and osteoarthritis (degeneration of joint cartilage and underlying bone).
- Diagnosis of early injury can be challenging

Aims of the study

- To estimate the incidence of carpal and fetlock injuries in young Thoroughbreds in race training
- To identify risk factors for such injuries that can be modified, in particular relating to exercise regimens
- To evaluate the value of blood serum biomarkers of cartilage synthesis and degradation, as tools for diagnosis of joint injury

Main findings

- Around 26% of the study population sustained a joint injury
- Overall incidence of joint injury was **2 per 100 horses per month**
  - Similar rates of carpal and fetlock injuries
- Trainer was significantly associated with joint injury occurrence
- Specific training surfaces were associated with higher or lower injury risk

Main findings

- Regular canter exercise reduced the risk of injury, however the further the distance cantered per month the higher the risk of severe joint injury
- Accumulation of exercise since entering training increased the risk of fetlock injury
- Use of medication was associated with higher risk of progressive injury
- Blood serum concentrations of specific cartilage biomarkers differed between cases and controls

Implications

- Modification of **exercise regimens** may reduce the risk of joint injury occurrence
- **Training surfaces** and **trainer-level factors** associated with injury risk need further investigation
- **Medication** should be used with care in injured horses; further work is required to establish optimal management strategies for horses with early injury
- Some **cartilage biomarkers** show promise as diagnostic and monitoring tools but this needs further validation

Scientists Summary

- Joint injuries in the TB racehorse are a welfare concern and a significant factor is time out of training;
- It is estimated that **20%** of lost training days are due to joint injury, but no accurate estimates of the incidence or associated risk factors have been made;
- This project will investigate whether the risk of joint injury for flat racehorses increases with increased high speed exercise from the time when a horse enters training.
- Influence of training surface and gallop construction on risk of joint injury will also be determined, helping to identify factors that affect the outcome of early joint injury.

Scientists Summary

- The effect of joint injury on the amount of cartilage biomarkers in the blood will also be examined
- 500 yearling TBs entering flat race training for a period of two years will be used;
- It is thought that the information gathered during this project will help trainers to design exercise regimens that could reduce the incidence of joint injuries
- In future, it is hoped that certain risk factors can be related to specific types of joint injury, lowering the risk and therefore allowing more effective prevention of each injury type.