In horses with pituitary *pars intermedia* dysfunction and laminitis, does treatment with pergolide improve signs of laminitis?



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#### Background

Pituitary *pars intermedia* dysfunction (PPID) is common in older horses. It is associated with various clinical signs including laminitis. Cases of PPID with laminitis are frequently treated with pergolide to improve clinical signs and/or frequency of laminitis.



## **Objectives**

To examine whether, in horses with PPID and laminitis, available evidence shows that treatment with pergolide reduces the severity or frequency of laminitis.

# **Clinical Bottom Line**

At present there is insufficient evidence to determine whether pergolide improves the clinical signs of laminitis in cases of PPID with laminitis. Robust clinical trials are required.

## **Search Strategy**

Literature searches were performed using Pubmed, CAB Abstracts and Google Scholar from inception to 28/4/14.

Search terms were: pergolide AND equine, pergolide AND laminitis and equine AND pituitary AND pars-intermedia AND dysfunction AND treatment. Requests for unpublished data were made to the Veterinary Medicines Directorate and Boehringer Ingelheim.



- Pubmed, CAB Abstracts, Google Scholar
- Requests for unpublished data to the VMD and Boehringer Ingelheim

# **Selection Criteria**

English language, peer reviewed articles describing the treatment of PPID and laminitis were included if clinical signs of laminitis were reported before and after treatment. Expert opinion and reports describing fewer than three cases were excluded.

#### **Data Collection and Analysis**

One author reviewed the included studies to assess the quality of the evidence using established guidelines from human medicine [1,2].

# Study Selection 148 articles, 1 document from VMD

Data Collection & Analysis2 analytical studies2 descriptive studies

#### English language, peer reviewed, >3 cases

- Pergolide treatment used
- Clinical signs of laminitis reported before and after treatment

 Quality of study and reporting assessed by one author

#### Results

No high quality studies were found. Two analytical observational studies [3,4] and two descriptive studies [5,6] were retrieved in which cases of PPID and laminitis formed a subset of PPID cases. All included studies were considered to be at high risk of bias and none were comprehensively reported. Specific factors that reduced the quality of the available evidence included: study design, reported clinician bias, an absence of blinding and randomisation, inappropriate statistical analysis, small sample sizes and absent data on concurrent treatments. Signs of laminitis improved in most cases of PPID and laminitis that received pergolide (and in most cases that received cyproheptadine instead). Robust assessments of treatment efficacy could not be made.

## Conclusions

The available evidence is limited. Laminitis improved in most cases that received pergolide but improvement cannot be attributed to pergolide treatment. Rigorous clinical trials are indicated given the welfare burden of laminitis with PPID. Evidence-based scrutiny of other commonly used equine treatments is warranted.

#### References

[1] OCEBM-Levels-of-Evidence-Working-Group (2011) The Oxford 2011 Levels of Evidence, Oxford Centre for Evidence-Based Medicine.

[2] Higgins JPT, Green S (eds) (2011). Cochrane Handbook for Systematic Reviews of Interventions Version 5.1.0. The Cochrane Collaboration, 2011. www.cochrane-handbook.org.

[3] Perkins, G.A., Lamb, S., Erb, H.N., Schanbacher, B., Nydam, D.V. and Divers, T.J. (2002) Plasma adrenocorticotropin (ACTH) concentrations and clinical response in horses treated for equine Cushing's disease with cyproheptadine or pergolide. *Equine vet. J.* **34**, 679-685.

[4] Donaldson, M.T., LaMonte, B.H., Morresey, P., Smith, G. and Beech, J. (2002) Treatment with pergolide or cyproheptadine of pituitary pars intermedia dysfunction (equine Cushing's disease). J Vet Intern Med **16**, 742-746.

[5] Spelta, C.W. and Axon, J.E. (2012) Case series of equine pituitary pars intermedia dysfunction in a tropical climate. Aust Vet J 90, 451-456.

[6] Peters, D., Erfle, J. and Slobojan, G. (1995) Low-dose pergolide mesylate treatment for equine hypophyseal adenomas (Cushing's syndrome). Proc Ann Conv Am Assoc Equine Prac 41, 154-155.