Acute pain in piglets from ear tagging, ear notching and intraperitoneal injectable transponders

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INTRODUCTION

Pig identification is crucial for animals going to sale or slaughter to ensure traceability to provide assurance of quality and to protect public health. However, through the introduction of different identification techniques, welfare issues surrounding their application have had minimal investigation on their ability to stimulate acute pain.

OBJECTIVE

To determine the **short-term physiological** and **behavioural responses** of piglets that have undergone **ear tagging**, **ear notching** or **IP injection** of an electronic transponder as indirect measures of acute pain.

METHODS

- **120 piglets** (24 litters) in 5 treatments groups:
  - ~ Ear tagging (ET) ~ Ear tagging control (SHAMEar)
  - ~ Ear notching (EN) ~ IP injection control (SHAMIP)
  - ~ IP injection (IP)
- **4 – 12 d** old piglets
- Application of treatments 90s
- Vocalisation recordings using Sound Level Meter (dB)
- Salivary **cortisol** and blood **lactate** measurements pre and post-treatment
- **Behavioural observations** 3h post treatment (5min scan) (Figure 1)
- Weight at birth and at weaning

Ear notching

IP injection

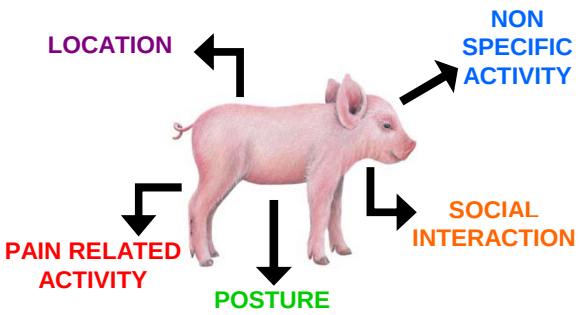


Figure 1: Behavioural recording categories

RESULTS & DISCUSSION

Behaviour

- Ear notched & ear tagged piglets showed more pain-related behaviour (P < 0.01)
- Ear tagged & IP piglets showed more isolation (P < 0.05)

Blood Lactate concentration

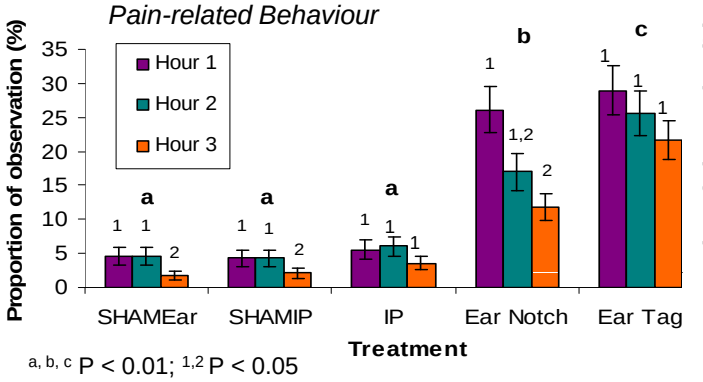
- Basal and post-treatment lactate differed in ear notched piglets (P < 0.001)
- Post-treatment lactate did not differ (P > 0.05) between treatments

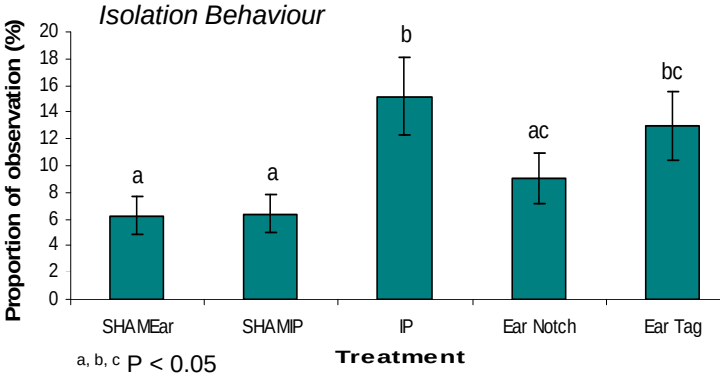
Vocalisations

- Tendency to differ (P = 0.059) between treatments (ear tagged piglets showed the highest sound pressure level)
- Interaction Treatment x Time (P < 0.001): Peak of sound pressure level at treatment application

Salivary Cortisol concentration

- Pre and post-treatment cortisol differed (P > 0.001)
- No differences in cortisol between treatment groups (P = 0.472)





Behavioural indicators of acute pain were observed post treatment with increased vocalisations, cortisol and lactate levels supporting these observations. ET and EN animals displayed more pain-related behaviour than IP and control piglets. Future studies should focus on pain persistence and the development of practical and cost-effective methods for reducing acute pain from identification interventions in piglets.