

Exploration of hydration status and outcome in feedlot calves examined for treatment

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Introduction

Feedlot cattle are visually evaluated for signs of illness and to determine treatment. Dehydration is hard to measure and reference ranges are often based on a different population.

Objective and Hypothesis

- Explore clinical markers for dehydration
 - Determine association with treatment outcome 90 days after enrollment.
- We hypothesize that dehydration will be associated with a poorer outcome.

Materials and Methods

96 cattle were evaluated at treatment for respiratory disease for hydration status using whole blood packed cell volume (PCV) and plasma total protein (TP). An animal was considered dehydrated if their PCV was over 46% [1]. Additional clinical markers of hydration:

- Skin tent
- Globe recession
- Capillary refill time
- Mucous membrane quality

Treatment failure was assessed 90 days after enrollment. A treatment failure was defined as re-treatment or death due to any cause.

Correlation analyses were performed to measure association between:

- Hydration status and clinical markers of hydration
- Hydration status and outcome
- PCV and TP

Results

9 animals were dehydrated based on a PCV greater than 46%.

Table 1: Chi-square correlation to hydration status. Significant differences ($p < 0.05$) are bolded.

Correlation to hydration status	X-squared	p-value
Treatment failure	0.38	> 0.05
Skin tent time	10.15	< 0.05
MM quality	9.99	> 0.05
Globe recession	1.71	> 0.05
CRT	0.11	> 0.05

There was no significant association between hydration status and treatment outcome

Figure 1: PCV and TP of cattle evaluated for treatment outcome.

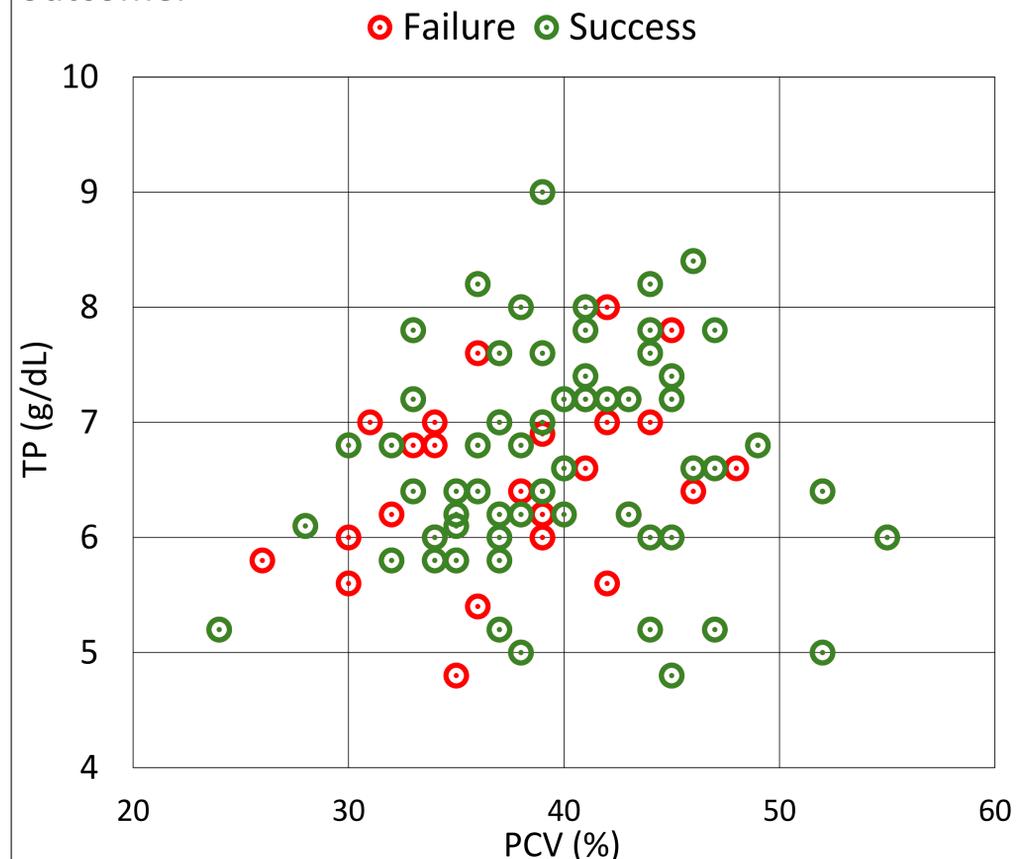
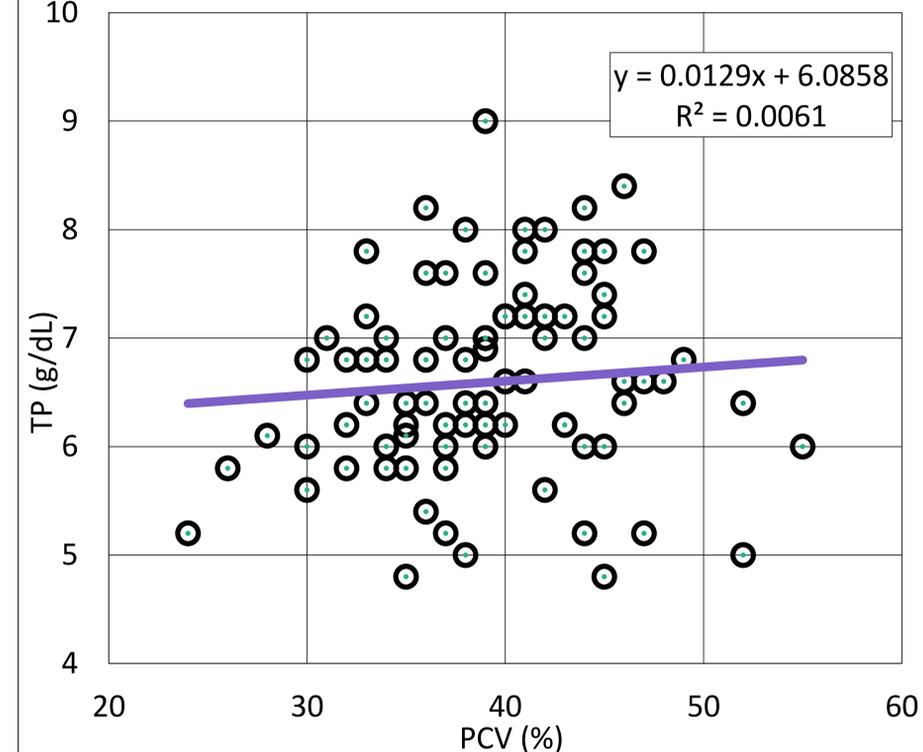


Figure 2:

PCV and TP of cattle evaluated for treatment outcome. Correlation between PCV and TP was not significantly different ($p > 0.05$) from 0.



Conclusions

- Few feedlot cattle are dehydrated at treatment based on PCV
- Skin tent may be the best clinical marker for hydration status
- Treatment failure is likely not correlated with hydration status at treatment
- PCV and TP have poor correlation

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Reference

