

# INCIDENCE OF SALMONELLA SHEDDING IN HORSES WITH COLIC PRESENTED TO AN EQUINE REFERRAL HOSPITAL IN QATAR

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## RATIONALE

Undetected sub-clinical shedding of Salmonella can lead to disease outbreaks in equine hospitals.

Potential consequences of a Salmonella outbreak include:

- Increased patient morbidity and mortality (1)
- Significant economic loss and hospital closure (2)
- Zoonotic infection
- Reputational damage

Understanding incidence can inform biosecurity protocols and minimise nosocomial infection.

Identifying differences in haematology and biochemistry values could facilitate early identification of high-risk patients.

## OBJECTIVES

To define the incidence of Salmonella shedding in horses with colic in Qatar.

To evaluate whether significant differences in haematology or serum biochemistry values are observed in Salmonella positive patients.



## METHODS

A prospective observational study was carried out over a 2-year period from June 2021 to June 2023.

Every adult horse presented to Qatar Foundation's Equine Veterinary Medical Center with a primary complaint of colic was tested for Salmonella within 24 hours of admission (1-3 pooled samples).

All patients underwent haematology and serum biochemistry analysis.

Incidence of Salmonella shedding amongst colic patients was established. Differences in clinicopathological data between positive and negative colic patients were also analysed to identify possible indicators of Salmonella shedding.

Incidence = 7.5%

## RESULTS: SALMONELLA TESTING

- 321 horses were tested
- 18 were positive on both PCR and culture
- 3 were positive on culture and negative on PCR
- 2 were positive on PCR and negative on culture
- 1 was positive on PCR and no culture testing was carried out

## RESULTS: HAEMATOLOGY AND SERUM BIOCHEMISTRY VALUES

Each Salmonella positive case was compared to the two chronologically closest negative colic patients as controls.

Comparison was made between arrival values for:

- Total white blood cell count
- Neutrophil count
- Haematocrit
- Total protein concentration
- Albumin concentration
- Creatinine concentration
- Lactate concentration

Test for normality = Shapiro-Wilks  
Comparison - Mann-Whitney  
P value <0.05

No statistically significant differences were detected between Salmonella positive patients and controls.

## COMPARISON OF INCIDENCE OF SALMONELLA SHEDDING ACROSS VETERINARY HOSPITALS

LOCATION	INCIDENCE OF SALMONELLA SHEDDING IN PATIENTS WITH COLIC (%)
California, USA (3)	3.5
Doha, Qatar	7.5
Colorado, USA (4)	9
Florida, USA (5)	13

## CONCLUSIONS

The incidence of Salmonella shedding in horses presented to an equine hospital in Qatar is similar to those reported in hospitals in the USA.

There were no significant differences in haematology or biochemistry values between Salmonella positive patients and negative controls. Therefore, these values cannot be used to identify high-risk patients for enhanced biosecurity measures.

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