



Evaluation of Diet's Effects and Ability of the Hemocult® Assay for the Detection of Faecal Occult Blood in Healthy Dogs

A. Pierini; F. Bartoletti; G. Lubas; E. Gori; V. Marchetti

Department of Veterinary Sciences, University of Pisa, Pisa, Italy

The guaiac-based faecal occult blood (FOB) test is widely used for colorectal cancer screening in humans. In dogs, it has been reported to be able to detect FOB after oral administration of 20 mg of haemoglobin/Kg body weight ($\text{mg}_{\text{hgb}}/\text{kg}_{\text{bw}}$) of autologous blood, but it is not routinely used.

The aims of the work were: i) to evaluate the ability of Hemocult® to detect FOB in healthy dogs and to assess the influence of two diets; ii) to assess the influence of the time between faecal sampling and test results; iii) to find the lowest canine haemoglobin concentration to achieve all positive tests.

Initially, five healthy dogs were enrolled and each dog was fed with a meat-free protein diet (HA Purina®) then switched to gastrointestinal diet (EN Purina®) with 8 days of wash-out. No extra foods were permitted, apart from fresh or whey cheeses. The faeces of each dog were tested with Hemocult® assay the day before starting HA diet and four- and five-day after. Starting from day six and every 4 days, progressive doses of autologous blood (5, 15, 20, 25 and 40 $\text{mg}_{\text{hgb}}/\text{kg}_{\text{bw}}$) were administered orally and faeces were daily tested. Faeces were mixed with a wooden spatula before their collections. Thereafter, the same schedule described above was applied to each dog fed with EN diet. Then, the faeces of one dog were collected 6, 18 and 42 hours after a single 40 $\text{mg}_{\text{hgb}}/\text{kg}_{\text{bw}}$ blood-added meal. Seven test cards from each time-point faecal sample were prepared. Tests were assessed every two days until 14-day after collection. Finally, canine whole blood (18.0 $\text{g}_{\text{hgb}}/\text{dL}$) was progressively diluted in saline solution and directly applied on a set of three test cards until a negative result was found.

For the first aim, a total of 185 Hemocult® tests were examined. Twelve (6.5%) were positive and no association between positive tests and administered amount of blood was found. None of the blood-free stool specimens was positive. Regarding the second set of samples, only one resulted positive. Finally, 6.5 $\mu\text{g}_{\text{hgb}}/\text{mL}$ was the lowest concentration to achieve all positive tests.

In conclusion, Hemocult® was not been influenced by both HA and EN diets, but its reproducibility to detect FOB in stools was unsatisfactory. Although, Hemocult® was able to detect up to 6.5 $\mu\text{g}_{\text{hgb}}/\text{mL}$ when directly added to the card, the individual blood digestion and bowel transit time may be play a role on its poor reproducibility.

DISCLOSURES

No disclosures to report.

SPEAKER INFORMATION

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[Alessio Pierini](#)

Department of Veterinary Sciences

University of Pisa

Pisa, Italy

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