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THE URINE TEST AFTER THE ADMINISTRATION OF THE NONIONIC CONTRAST SUBSTANCE ULTRAVIST 300 TO THE DOG

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Summary

It is a known fact that functional and structural modifications of different intensities determined by different factors can occur regardless of the contrast substance used by radiology. The most important factors are the structure and chemical properties of the contrast substance responsible for the modifications of the vascular bed and for the adverse reactions. From this point of view, the osmolarity and the content of active substance are the most important factors, inevitably followed by the characteristics of the species, race, age, sex and individual, all with great importance in the field of veterinary medicine. These factors must be taken into account in a serious manner as differences of both localisation and intensity of the reactions can occur on an individual level even if the individual is part of a group.

Once the nonionic low osmolarity contrast substances were discovered, the secondary reactions were lower in intensity, thus favorizing their administration to a larger number of patients, for a larger number of investigations.

Urine, a secretion product of the kidneys basically formed by three fundamental processes such as ultrafiltering the plasma at the glomerular level, the reabsorption and secretion of certain constituents at the tubular level, was subjected to a physical and biochemical exam.

Material and method

The nonionic contrast substance Ultravist 300 was administered to a number of 10 dogs of different breed, size, sex and age in order to realize a rapid intravenous urography. Blood and urine samples were collected for lab tests after the urography in order to highlight the influence of the contrast substance on the organism.

We have thus carried out a complete urine test in order to establish the color, transparency, density, pH, leucocytes, erythrocytes, glucose, ketonic bodies, ascorbic acid, urobilirogen, bilirubin and urine sediment.

Results and discussions

The color of the urine was normal - yellow, before the administration of the substance, suffering a slight darkening within 1-6 hours after the administration and returning to normal after 24 hours.

The amount of urine collected for each sample was 10 ml, which were obtained easily.

The smell of the urine was characteristic to the specie, no other smells being detected.

Table 1

Urinal constants before the administration of Ultravist 300 to the dog

Den-sity	Leuco-cytes	Nitrates	pH	Erythro-cytes	Proteins	Glucose	Ascorbic acid	Ketonic bodies	UBG	BIL
1.030	Neg.	Neg.	5	Neg.	Neg.	Normal	40 mg/dl	Neg.	Normal	Neg

Urine sediment test: - amorphous salts
- 6 leucocytes/field
- rare erythrocytes

Table 2

Urinal constants 1 hour after the administration of Ultravist 300 to the dog

Den-sity	Leuco-cytes	Nitrates	pH	Erythro-cytes	Proteins	Glucose	Ascorbic acid	Ketonic bodies	UBG	BIL
1.015	Neg.	Neg.	7	50++	Neg.	Normal	Neg.	Neg.	Normal	Neg.

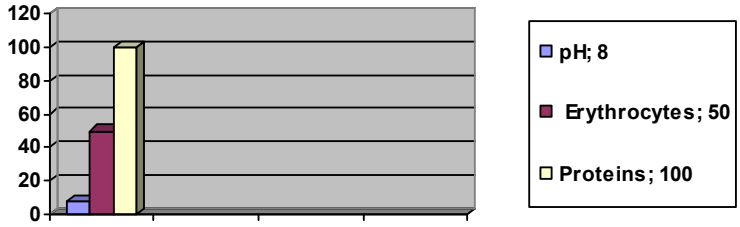
Urine sediment test: - hematic cylinders
- epithelial cells
- 2 – 3 leucocytes/field

Table 3.

Urinal constants 6 hour after the administration of Ultravist 300 to the dog

Den-sity	Leuco-cytes	Nitrates	pH	Erythro-cytes	Proteins	Glucose	Ascorbic acid	Ketonic bodies	UBG	BIL
1.000	Neg.	Neg.	8	50.2+	100 mg/dl	Normal	Neg.	Neg.	Normal	Neg

Urine sediment test: - frequent eythrocytes
- 4–5 calcium oxalates



Graph 1. – Graphic representation of the urinal constants 6 hours after the administration of Ultravist 300 to the dog

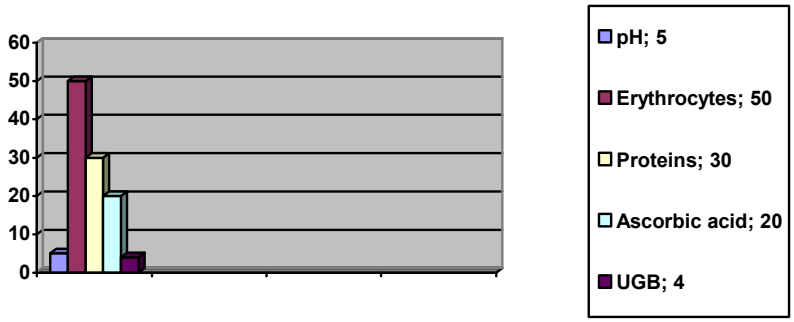
Table 4

Urinal constants 6 hours after the administration of Ultravist 300 to the dog

Den-sity	Leuco-cytes	Nitrates	pH	Erythro-cytes	Proteins	Glucose	Ascorbic acid	Ketonic bodies	UBG	BIL
1.030	Neg.	Neg.	5	50.2+	30 mg/dl	Normal	20 ml/dl 1+	Neg.e	4 mg/dl	Neg.

Urine sediment test: - 6–7 leucocytes/field

- Calcium oxalate microcrystals
- Frequent Erythrocytes



Graph 2. – Graphic representation of the urinal constants 24 hours after the administration of Ultravist 300 to the dog

Conclusions

1. After the administration of Ultravist 300 and its filtering at the glomerular level, the urine suffers a change in color: before the administration it has a yellow color, suffering a slight darkening within 1 – 6 hours after its administration, while in 24 hours from the administration it returns to its initial color;

2. The administration of the substance did not influence the smell of the urine;

3. The minimum amount of urine needed for carrying out the tests is 8 – 10 ml;

4. According to this study one can notice:
   - an increase in the pH level within the first 6 hours since its administration
   - the presence of the erythrocytes which is maintained for 24 hours in the urine, as well as of the proteins which appear in the first 6 hours after the administration and whose levels drop after 24 hours
   - the erythrocytes might be present in the urine also due to a lesion caused by the urethral probe

5. The urine sediment test highlights the presence of the erythrocytes, calcium oxalates, leucocytes, epithelial cells and of the hematic cylinders with minimum influence on the health of the animal.

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