

Plasma Cystatin C in the cat. . Reference values, changes with renal failure and other diseases

C. Martin, P. Péchereau, F. de la Farge, J. P. Braun, . University of Florida

► **To cite this version:**

C. Martin, P. Péchereau, F. de la Farge, J. P. Braun, . University of Florida. Plasma Cystatin C in the cat. . Reference values, changes with renal failure and other diseases. 10. Congress of the International Society of Animal Clinical Biochemistry, Jun 2002, Gainesville, United States. hal-02762989

HAL Id: hal-02762989

<https://hal.inrae.fr/hal-02762989>

Submitted on 4 Jun 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

PLASMA CYSTATIN C IN THE CAT. REFERENCE VALUES, CHANGES WITH RENAL FAILURE AND OTHER DISEASES

C Martin¹, D Péchereau², F de La Farge³, JP Braun¹. ¹Dept of Biological Sciences – UMR 181, Veterinary School, 23 Chemin des Capelles, 31076 Toulouse Cedex 3; ²Veterinary Clinique, 50 Avenue J Mermoz, 64000 Pau; ³Dept of Biochemistry, Hopital Rangueil, Av Pr J Poulhès, 31403 Toulouse Cedex, France.

Objective: Cystatin C, a small protein (Mr ~ 14000) is an earlier marker of renal failure than plasma creatinine in humans. In dogs, its plasma concentration is also increased in renal failure. The aim of this study was to investigate whether plasma cystatin C could be used in the diagnosis of kidney diseases in the cat.

Methods: Plasma cystatin C concentration was measured by an immunoturbidimetric technique for human cystatin C (Dako reagents, Cobas Mira analyzer) in 99 clinically healthy cats (controls) with plasma creatinine and plasma urea within normal range, 75 cats (group A) with clinical signs of renal disease and plasma creatinine and/or plasma urea above the upper limit of the reference interval, 35 cats with clinical signs of renal disease and normal plasma urea and plasma creatinine, 24 clinically healthy cats with elevated creatinine and/or urea and 12 cats with other diseases. Data were analyzed by variance analysis, non-parametric comparison of means and correlation calculations.

Results: In controls, the distribution of plasma cystatin C was neither gaussian nor log-gaussian; non-parametric determination of the reference interval gave the following: median = 1.6 mg/L, 0.025/0.975 quantiles: 0.34/4.11 mg/L. In group A, mean plasma cystatin C was significantly elevated ($P < 0.05$): median and range were 2.59 and 0.35/9.52 respectively, but 60/75 cats had values ≤ 4.11 mg/L. In other groups, plasma cystatin C did not differ from controls ($P > 0.05$). Correlation between plasma cystatin C and creatinine or urea was low, whatever the group.

Discussion and Conclusion: The range of normal values of cystatin C in cats was much wider than in humans and dogs, in which the upper limit is about 1.3 to 1.5 mg/L. This might result from a poor specificity of rabbit anti-human cystatin C antibodies for cat cystatin C and unspecific binding to other plasma proteins. Moreover there was a great overlap of values between healthy and diseased animals. At this point, plasma cystatin C cannot be recommended for kidney function testing in cats.

Proceedings
**10th Congress of the International Society of Animal Clinical
Biochemistry for Animal Clinical Biochemistry**



**University of Florida
Gainesville, Florida, USA
June 18-22, 2002**

**Edited by: JW Harvey
A MacNeill
S Ramaiah
H Wamsley**