

HYPERCALORIC DIET PROMOTES VASCULAR CALCIFICATION IN UREMIC RATS



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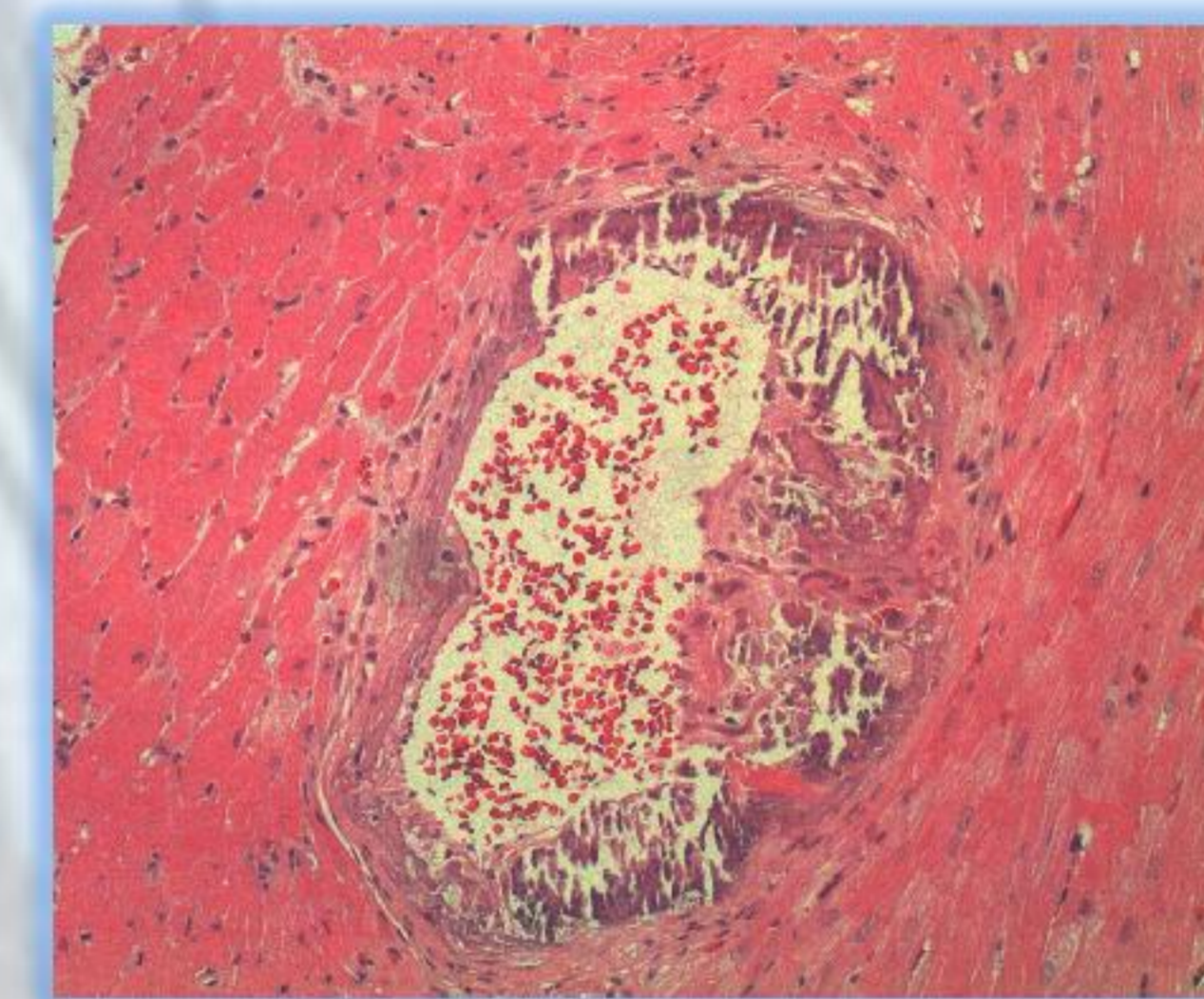
INTRODUCTION AND AIMS

Vascular calcifications are very prevalent among patients with chronic renal failure. High caloric dietary intake is a major cause of metabolic syndrome, which is associated with vascular disease in the general population and in uremic patients. In this work, we evaluate the effect of feeding a hypercaloric diet on the development of vascular calcifications in a uremic rodent model.

METHODS

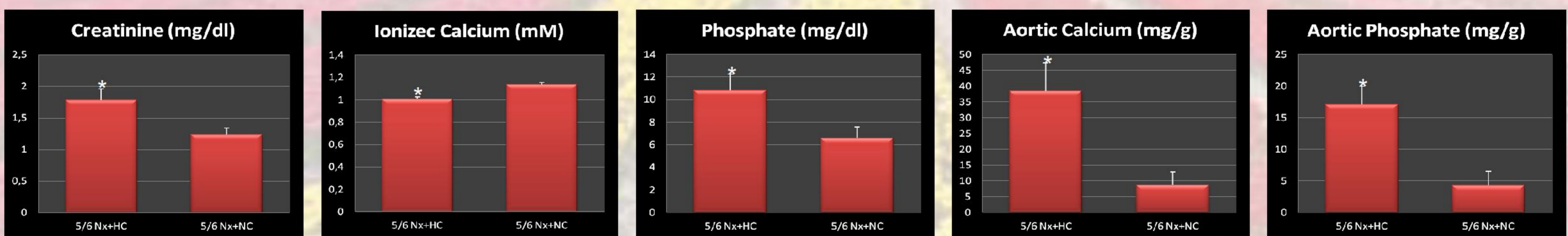


Femaleistar rats (n=) were divided in two groups: one group was fed a hypercaloric diet with % energy from fat. The second group was fed a standard diet with normal caloric content. After days, all animals were nephrectomized (5/6 Nx) as previously described. During days after nephrectomy, uremic rats were treated with calcitriol (ng/kg/ times a week) to promote vascular calcification, and fed for diet, both with moderate increase in the phosphate content (%). On day, rats were anesthetized with sodium thiopental and sacrificed by exsanguination. Blood was collected at sacrifice to measure serum creatinine, ionized calcium and phosphate. Samples of thoracic aorta were taken and processed for measurement of calcium and phosphate content and for histological examination.



Sections of thoracic aorta (up) and heart arteries (left) from 5/6 Nx rats fed a hypercaloric diet, showing severe calcification. Masson's trichrome staining.

RESULTS



Values are mean; *p < .05 vs 5/6 Nx+NC.

CONCLUSIONS

These data show that feeding a hypercaloric diet with high fat content may enhance the development of vascular calcifications in uremic rats.

REFERENCES

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