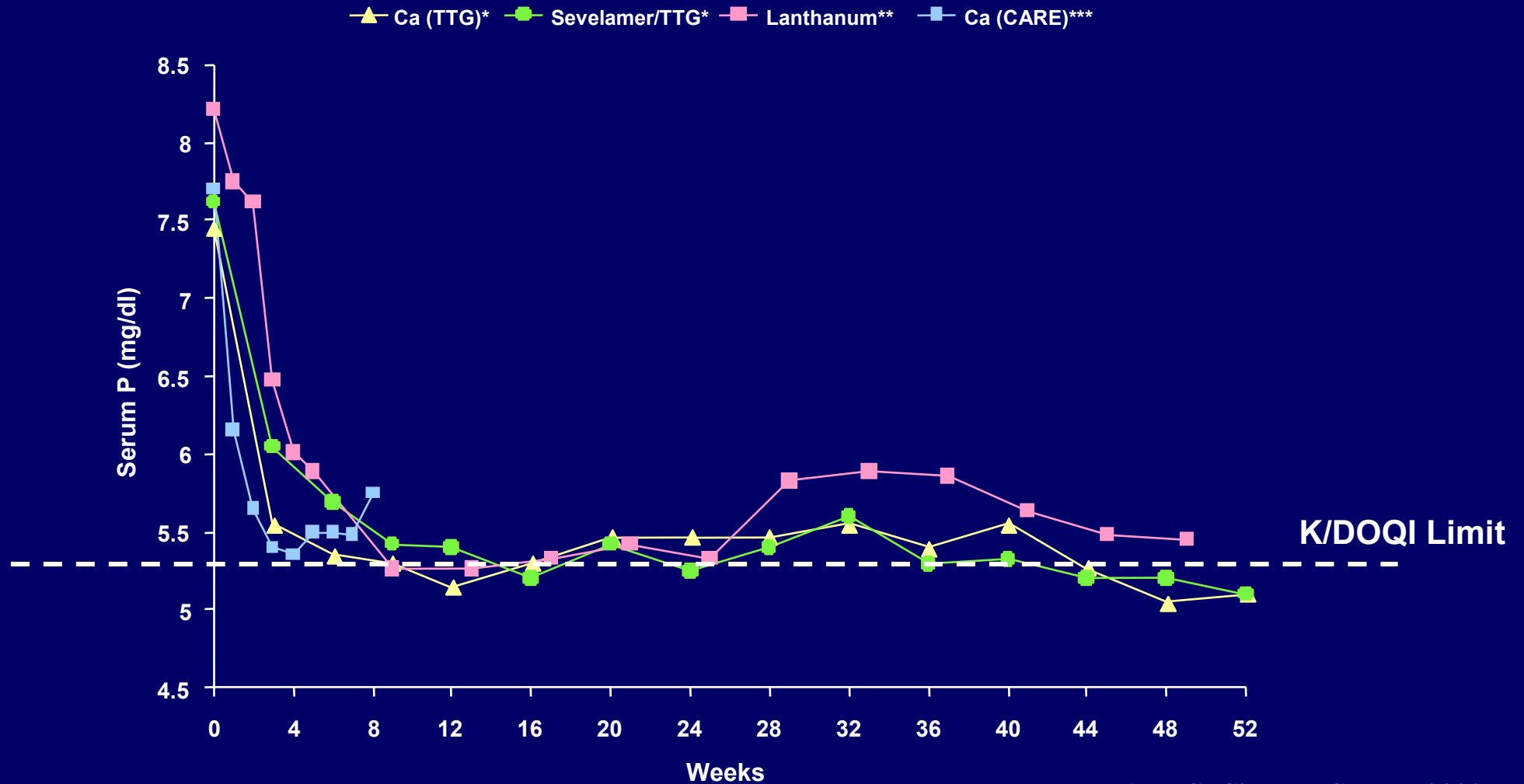


Is lanthanum carbonate toxic ?

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Control of serum phosphorus with La carbonate, as compared to other phosphate binders



* TTG: Chertow GM. KI 2002

** Hutchison WCN 03. Berlin

*** Qunibi W. et al. Kidney Int. 65: 1914-1926 (2004)

Absorption of phosphate binders from gut

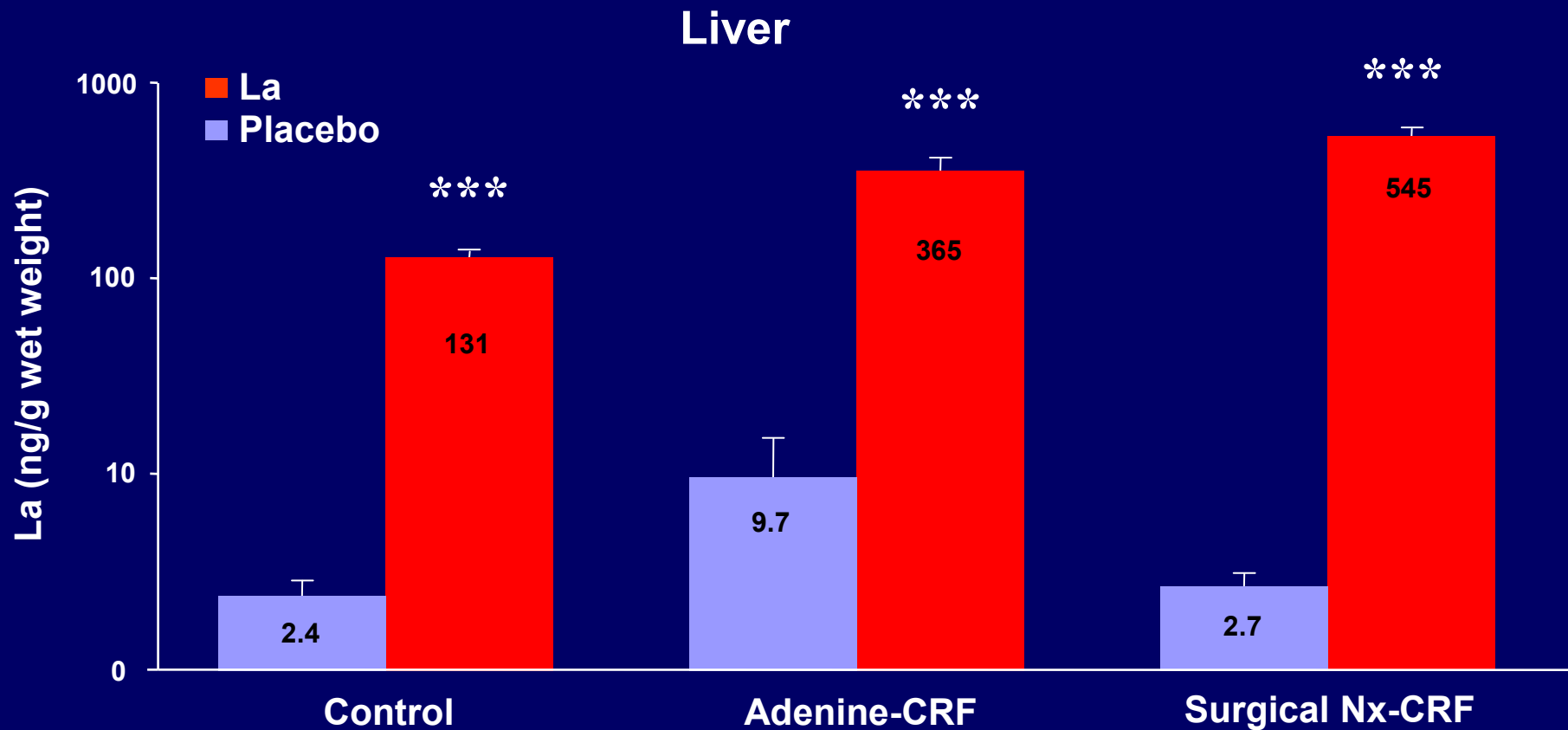
- ❖ Al hydroxide +++
- ❖ Ca carbonate / Ca acetate ++
- ❖ Mg carbonate ++
- ❖ La carbonate ++
- ❖ Sevelamer-HCl –

X-ray demonstration of La carbonate in gut



Cemy and Kunzendorf, NEJM 2006; 355:1160

Effects of oral La carbonate vs placebo on liver La content in rats after 4-wk exposure



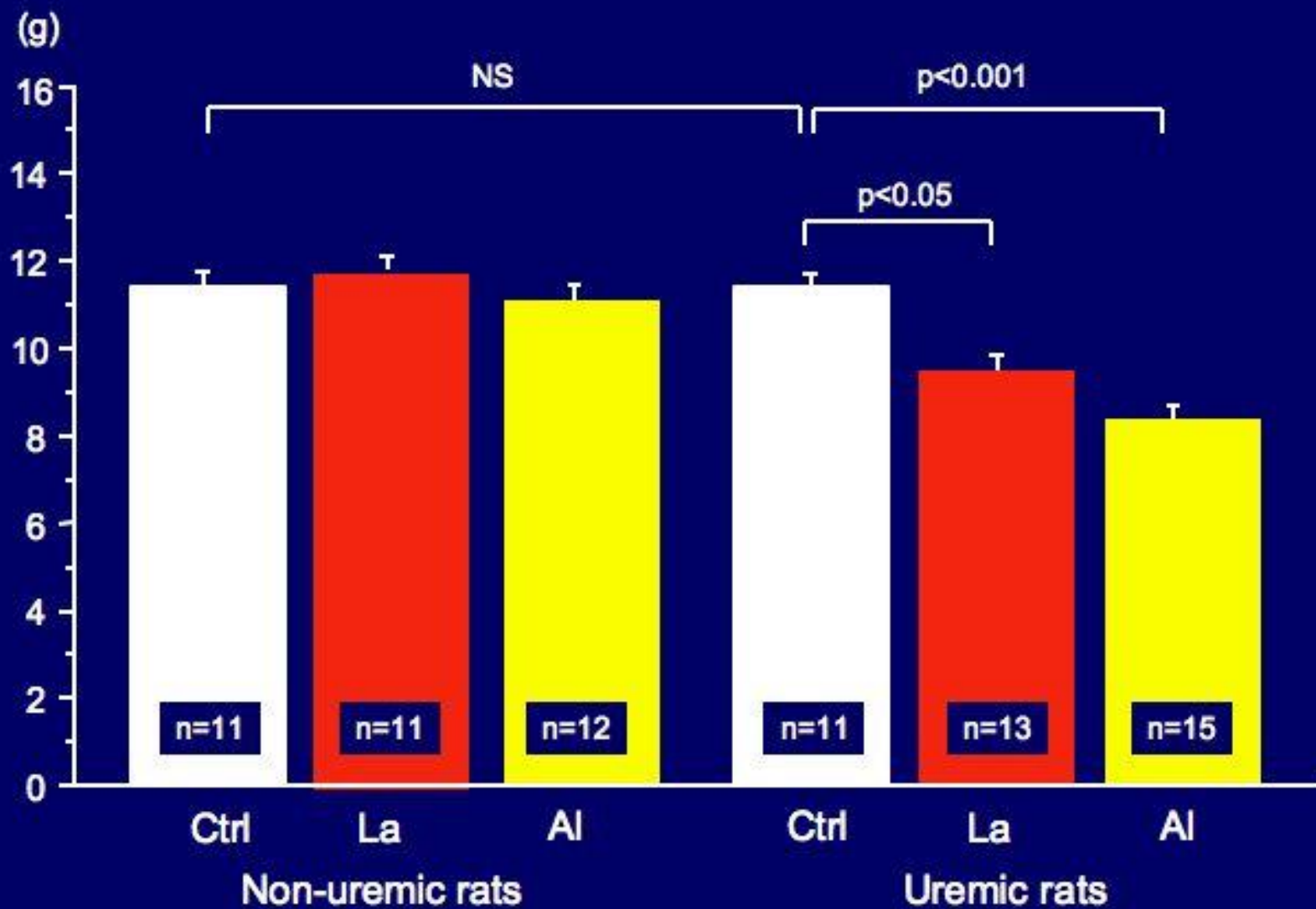
Control, non-CRF rats;

Adenine, adenine-induced CRF

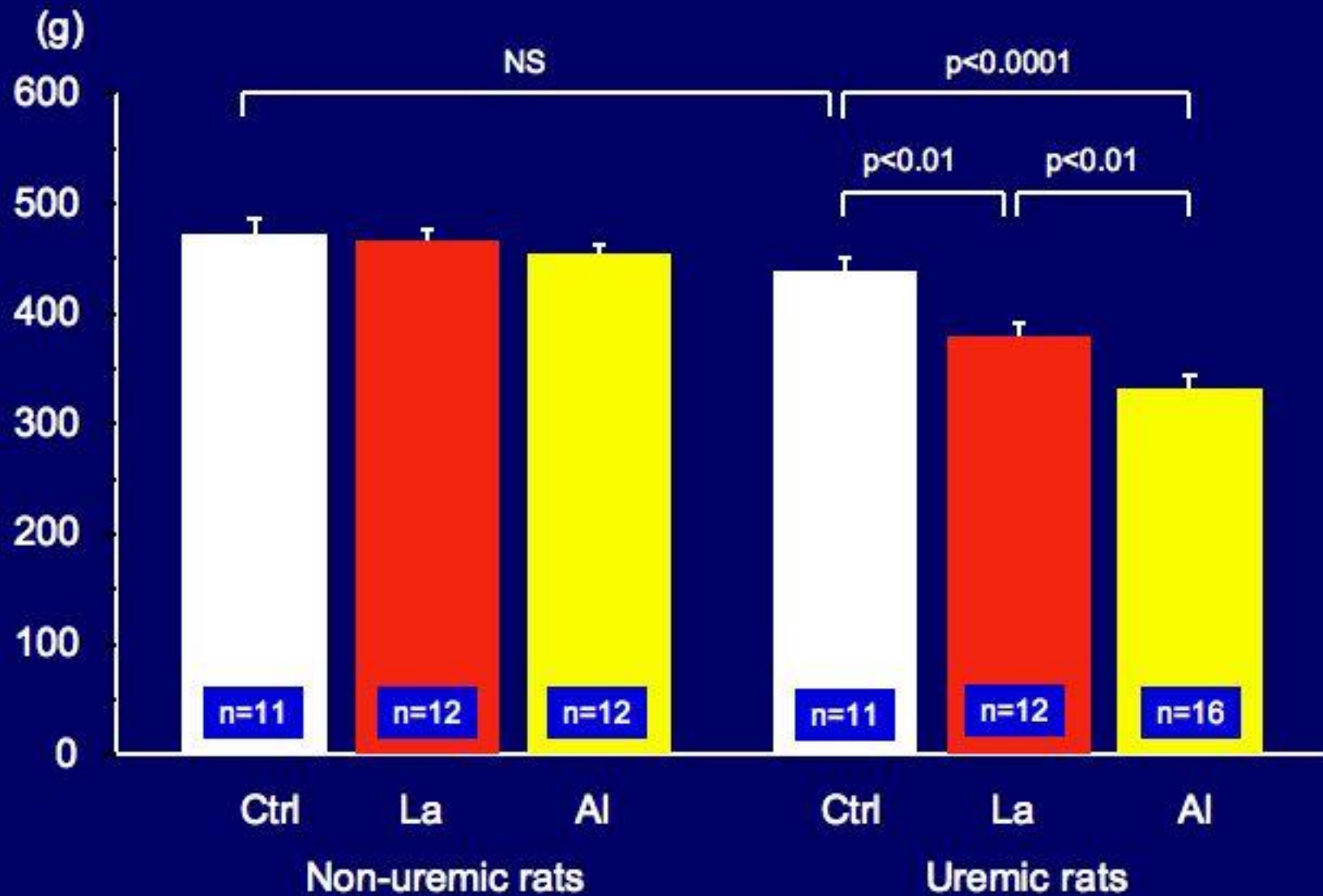
Surgical Nx, 5/6th nephrectomy-induced CRF

Lacour B et al, KI 2005;67:1062-9

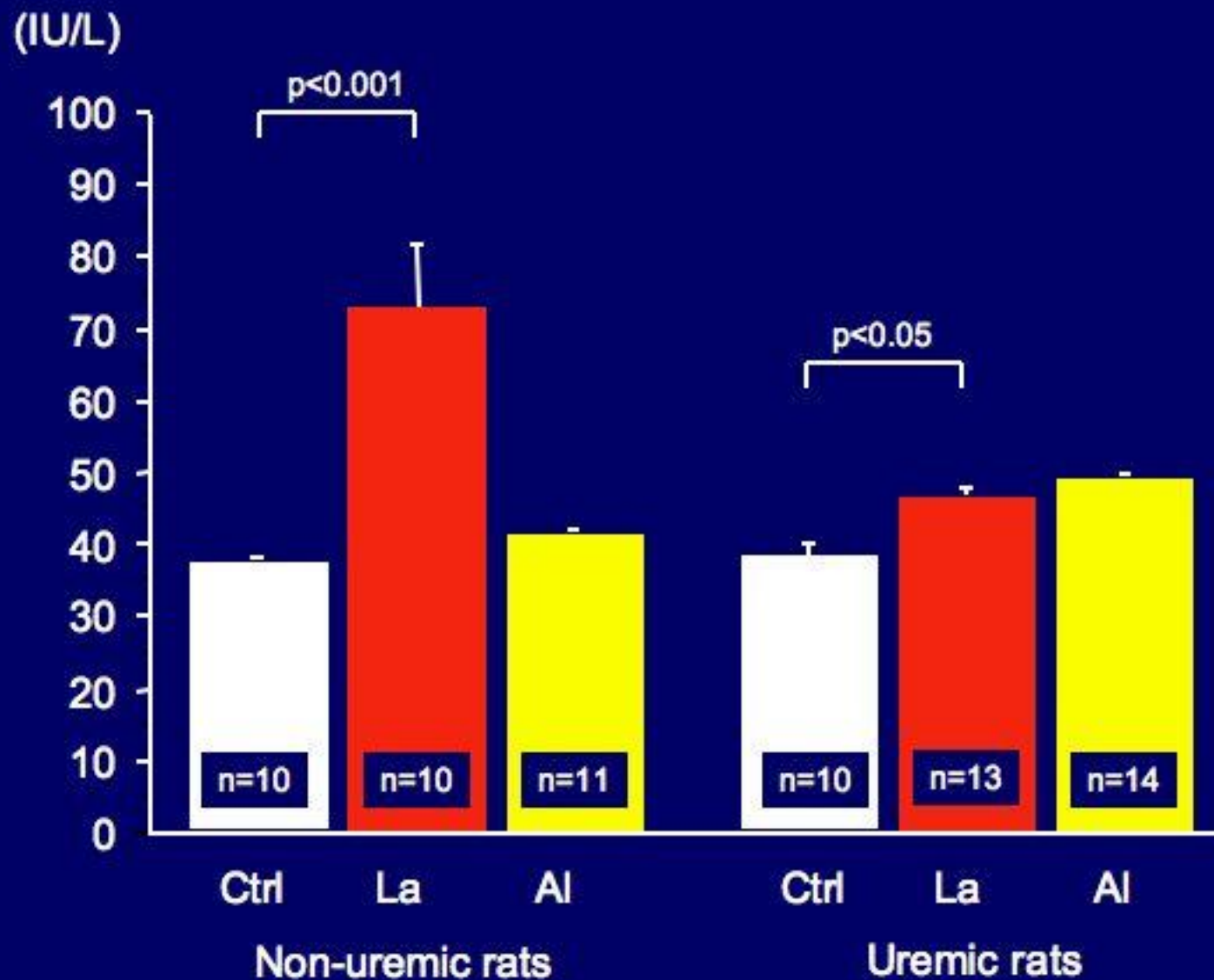
Liver weight in rats after 12-wk exposure (surg. CRF model)



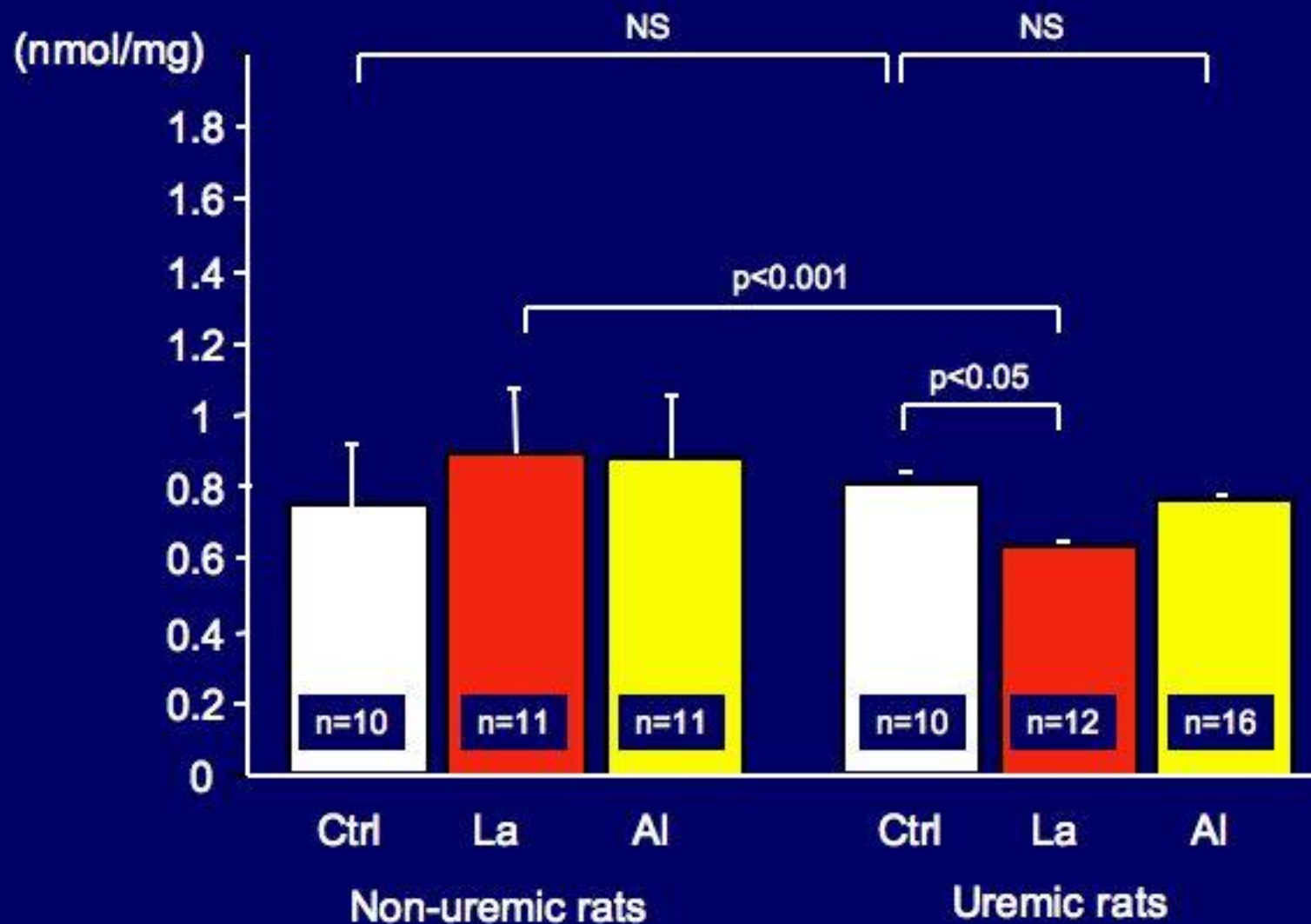
Body weight in rats after 12-wk exposure (surg. CRF model)



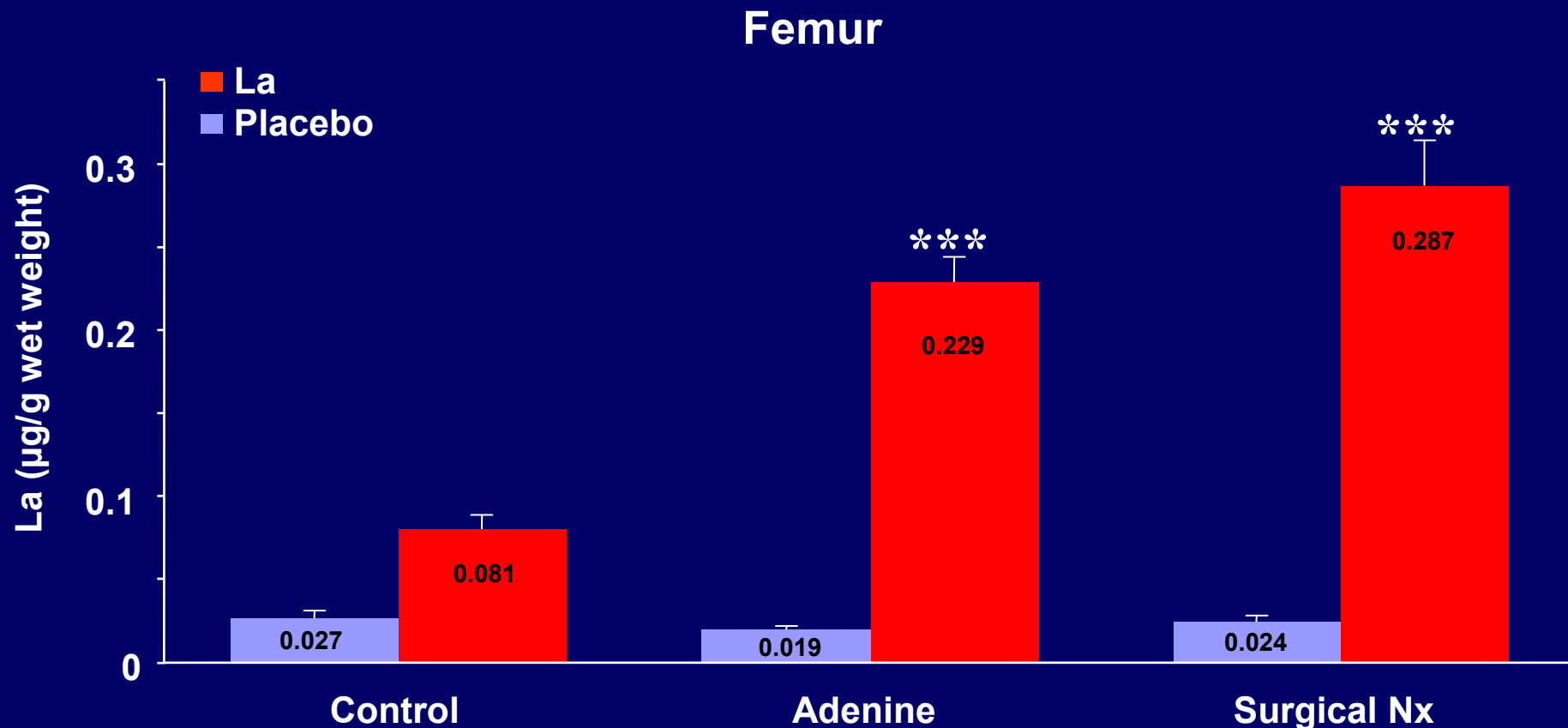
Serum ALT in rats after 12-wk exposure (surg. CRF model)



Liver P450 activ. in rats after 12-wk exposure (surg. CRF model)



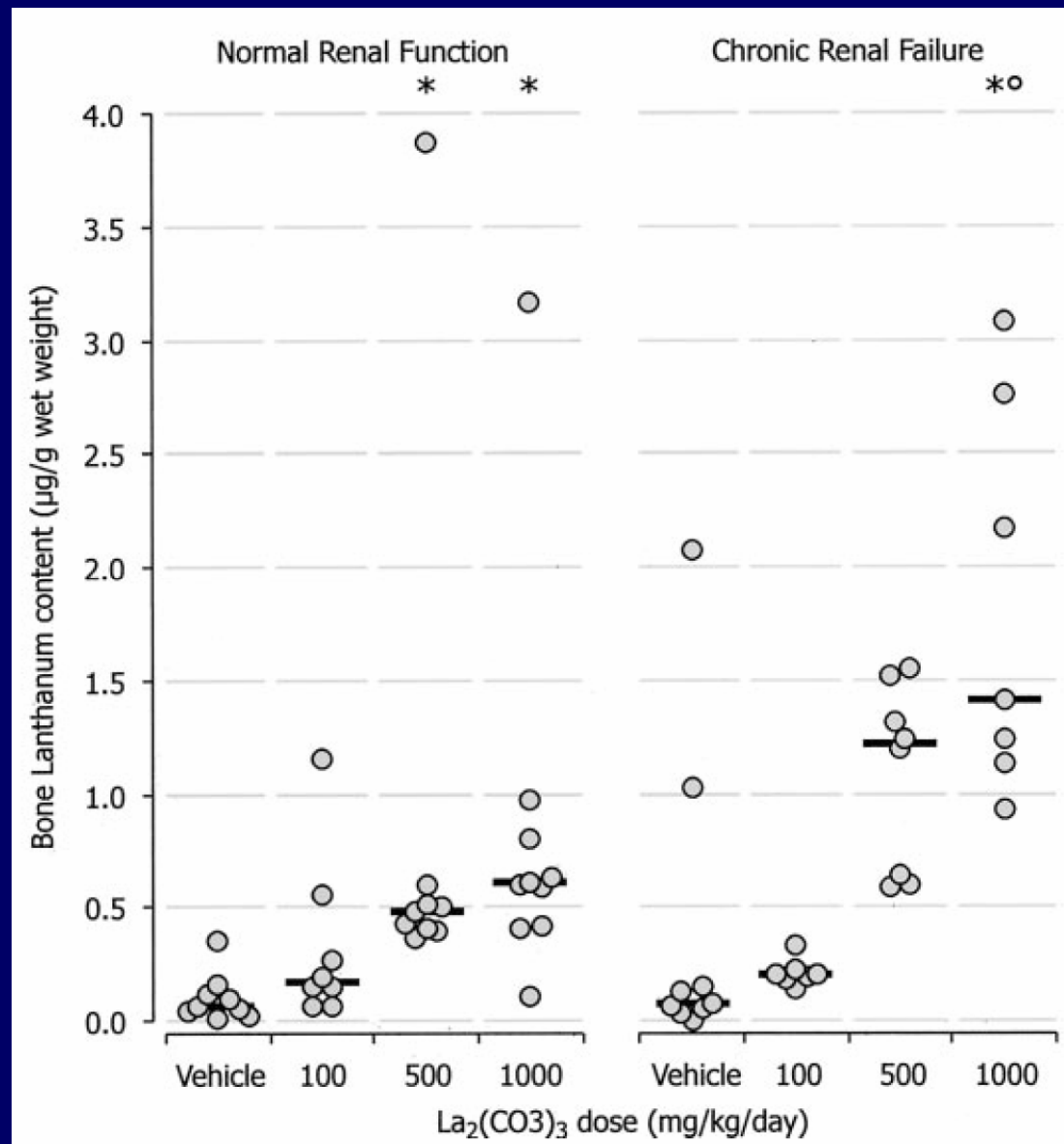
Effects of oral La carbonate vs placebo on bone La content in rats after 4-wk exposure



Control. non-CRF rats;
adenine. adenine-induced CRF
Surgical Nx. 5/6th nephrectomy-induced CRF

Lacour B et al, KI 2005;67:1062-9

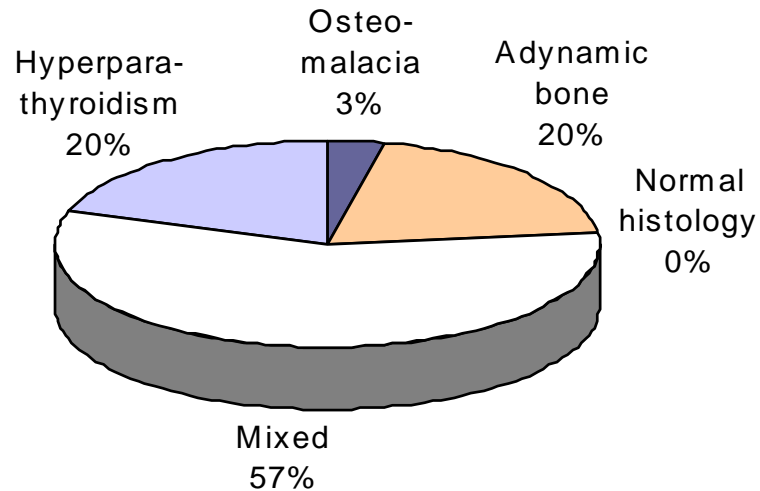
Bone La content in normal vs CRF rats after daily La carbonate gavage for 3 months



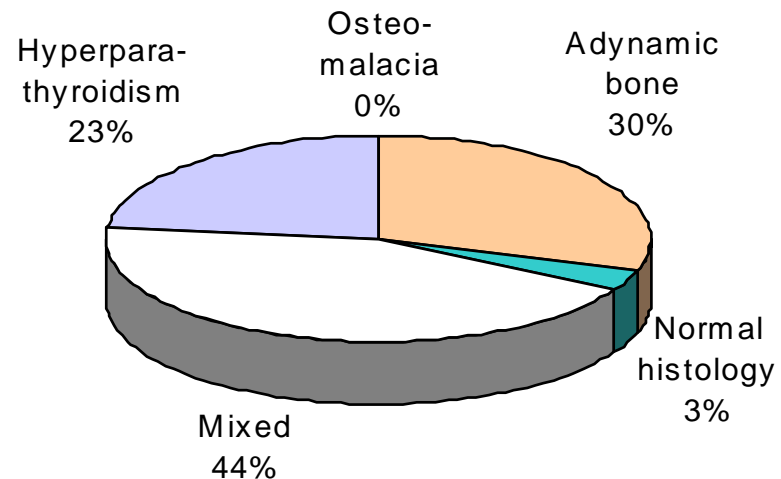
*Behets et al, JASN
2004; 15: 2219-28*

La carbonate vs Ca-containing P binders : effect on bone in ESRD patients

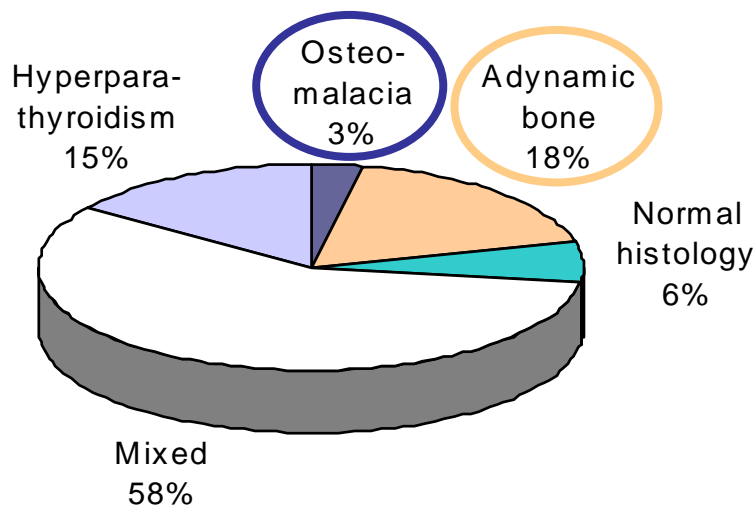
Calcium Baseline



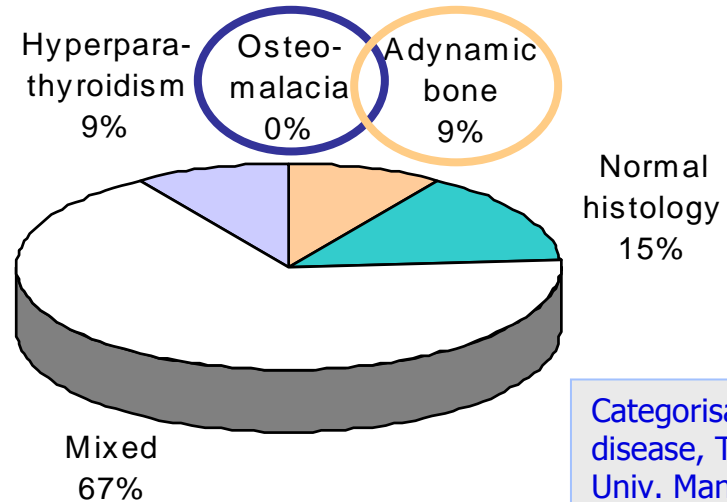
Calcium One Year



Lanthanum Baseline

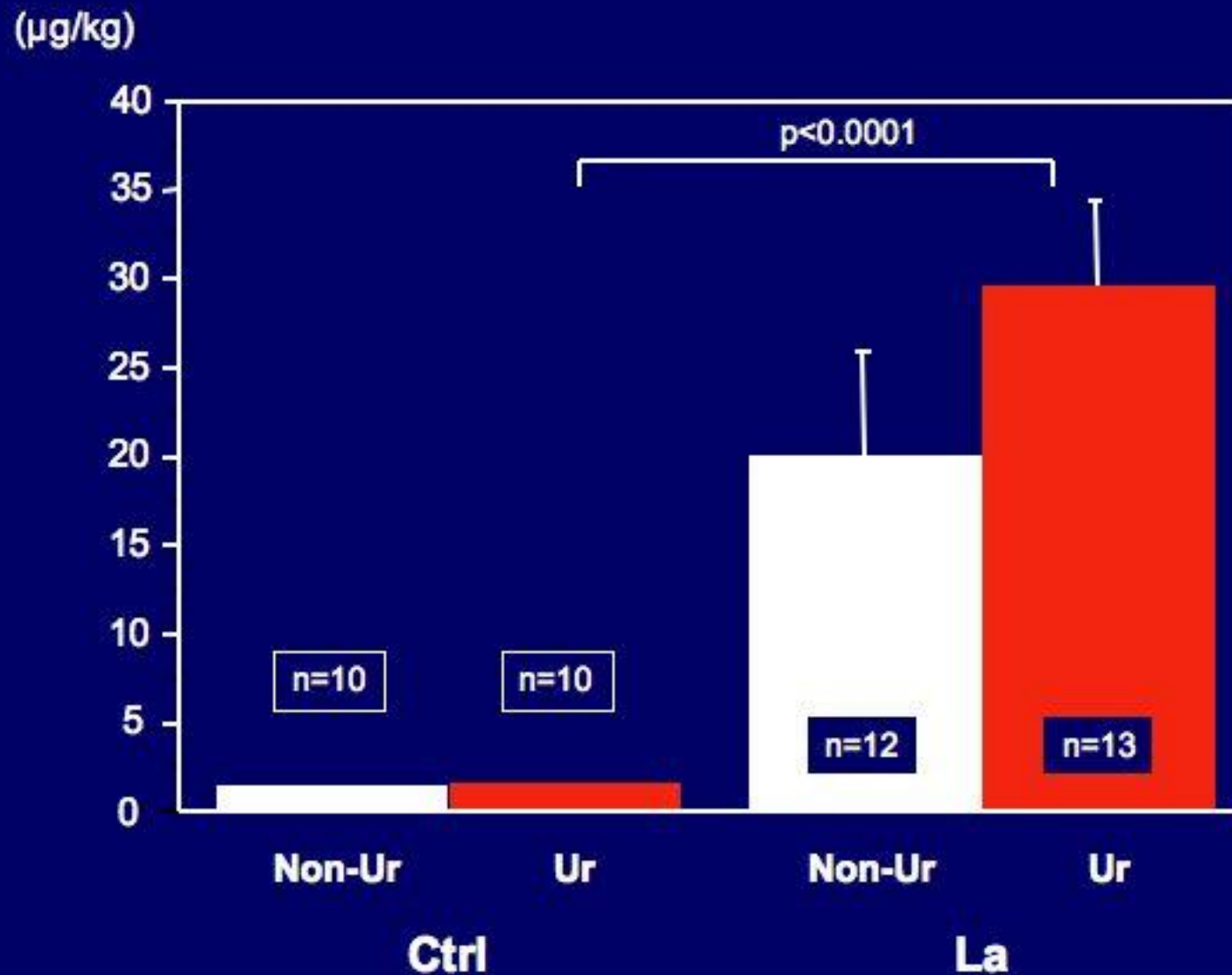


Lanthanum One Year



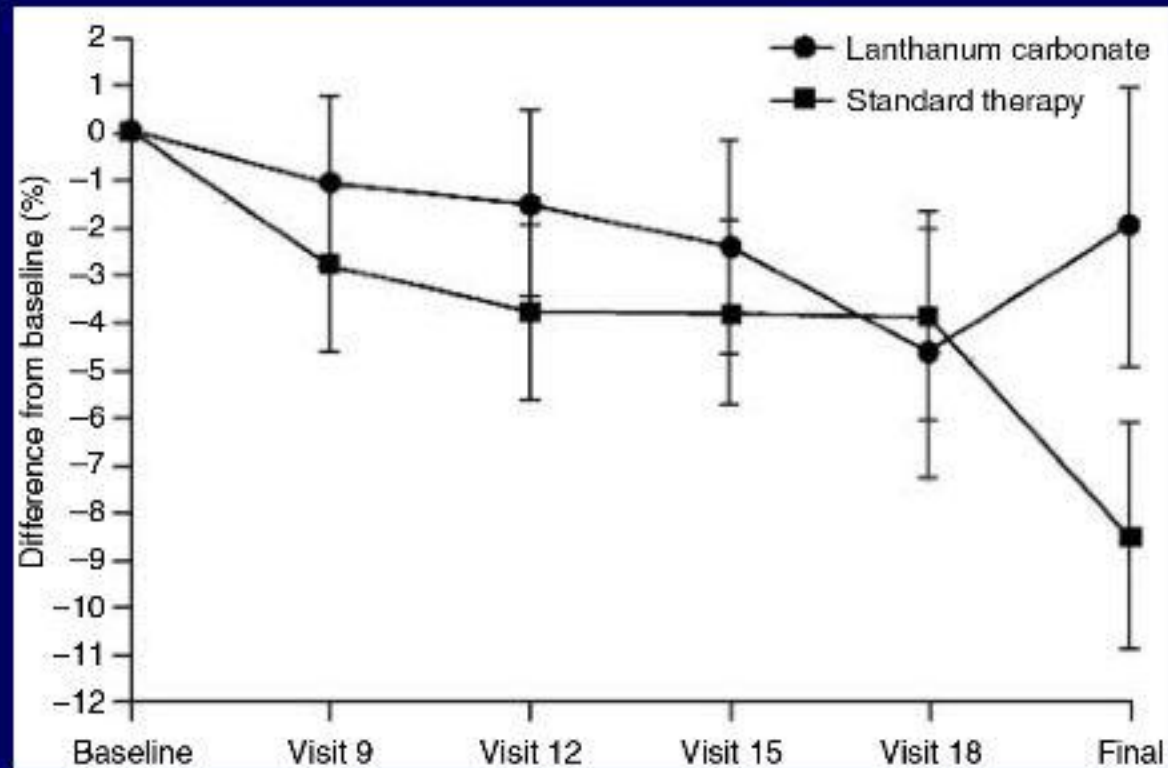
Categorisation of bone disease, T. Freemont, Univ. Manchester, UK

Brain La in rats after 12-wk exposure (surg. CRF model)



Brain function in chronic HD patients (over 24 mo.)

Digital vigilance task – targets detected (%)



Is lanthanum carbonate toxic ?

Conclusion

- ❖ Evidence for minor liver toxicity in rats with CRF
- ❖ No evidence so far for toxicity in ESRD patients