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1: [Kidney Int.](#) 2000 Jun;57(6):2360-74.



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Endotoxin and nanobacteria in polycystic kidney disease.

[Hjelle JT](#), [Miller-Hjelle MA](#), [Poxton IR](#), [Kajander EO](#),
[Ciftcioglu N](#), [Jones ML](#), [Caughey RC](#), [Brown R](#),
[Millikin PD](#), [Darras FS](#).

Departments of Biomedical and Therapeutic Sciences, Pathology,
and Surgery, University of Illinois College of Medicine at Peoria,
Peoria, Illinois 61656, USA. Hjelle@uic.edu

BACKGROUND: Microbes have been suspected as provocateurs of polycystic kidney disease (PKD), but attempts to isolate viable organisms have failed. Bacterial endotoxin is the most often reported microbial product found in PKD fluids. We assessed potential microbial origins of endotoxin in cyst fluids from 13 PKD patients and urines of PKD and control individuals. **METHODS:** Fluids were probed for endotoxin and nanobacteria, a new bacterium, by the differential Limulus Amebocyte Lysate assay (dLAL), genus-specific antilipopolysaccharide (LPS) antibodies, monoclonal antibodies to nanobacteria, and hyperimmune serum to Bartonella henselae (HS-Bh). Selected specimens were also assessed by transmission electron microscopy (TEM) and nanobacterial culture methods. **RESULTS:** LPS or its antigenic metabolites were found in more than 75% of cyst fluids tested. Nanobacteria were cultured from 11 of 13 PKD kidneys, visualized in 8 of 8 kidneys by TEM, and immunodetected in all 13 PKD kidneys. By immunodetection, nanobacterial antigens were found in urine from 7 of 7 PKD males, 1 of 7 PKD females, 3 of 10 normal males, and 1 of 10 normal females. "Nanobacterium sanguineum" was dLAL positive and cross-reactive with antichlamydial LPS and HS-Bh. Some cyst fluids were also positive for LPS antigens from Escherichia coli, Bacteroides fragilis and/or Chlamydia, and HS-Bh, as were liver cyst fluids from one patient. Tetracycline and citrate inhibited nanobacterial growth in vitro. **CONCLUSION:** Nanobacteria or its antigens were present in PKD kidney, liver, and urine. The identification of candidate microbial pathogens is the first step in ascertaining their contribution, if any, to human disease.

PMID: 10844606 [PubMed - indexed for MEDLINE]

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