SUPPLEMENTAL FIGURES 1-5

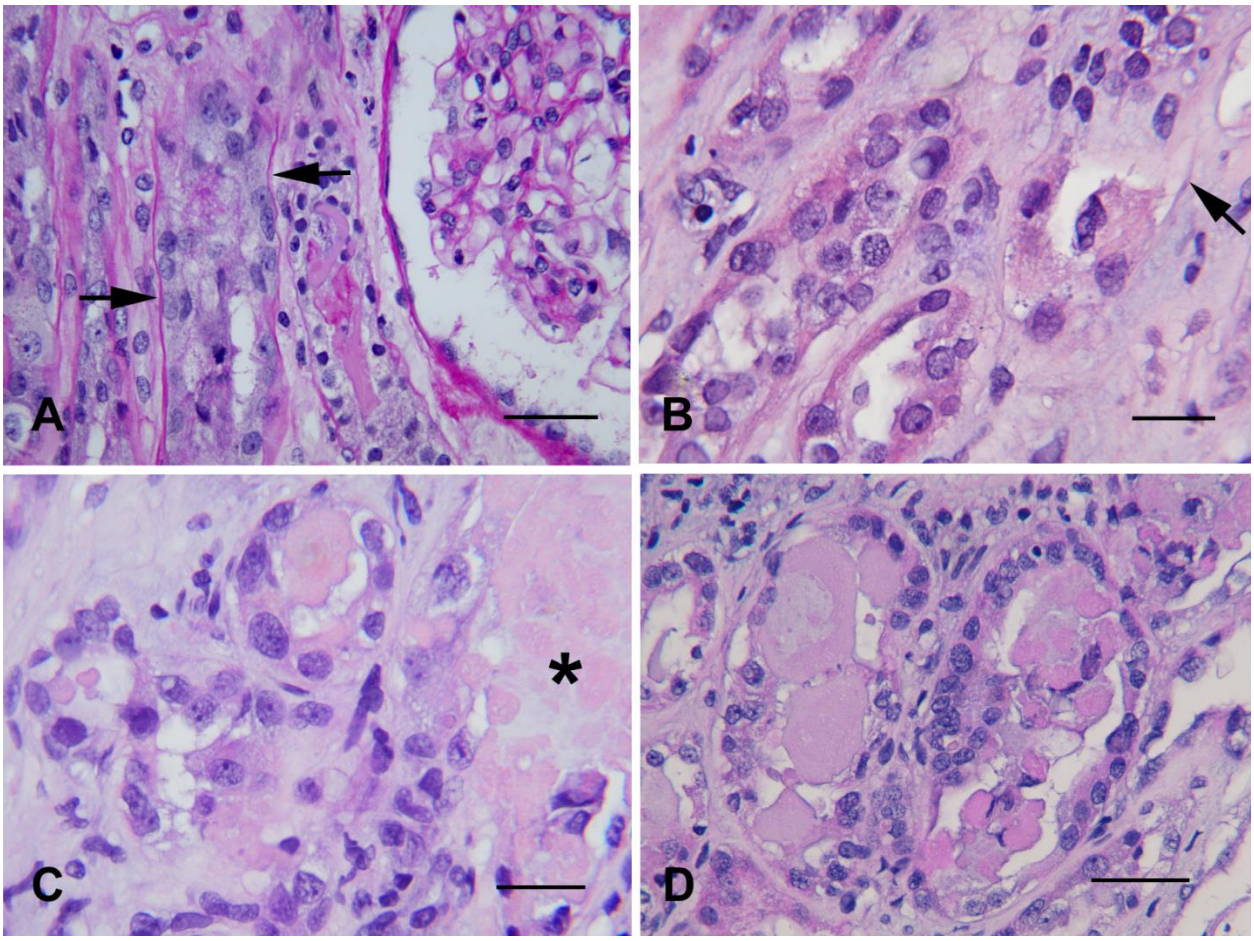

FIGURE 1: Additional light microscopy images D10Bx

A: Part of a glomerulus with patent capillaries and mild, segmental increase in mesangial matrix. Arrows mark a tubule with complete loss of tubular epithelium columnar cell polarity and absence of brush border. The basement membranes are within expected limits, indicating an acute process (no evidence of underlying tubular atrophy). PAS stain.

B: Diffuse acute tubular injury. Reactive nuclear enlargement, cytoplasmic swelling and isolated cell necrosis with denuded basement membrane (arrow). H&E stain. C: Severe acute tubular injury with cytoplasmic swelling and coarse vacuolization. Multicellular tubular cell necrosis, with shedding into the lumen (asterisk). H&E stain. D: Two tubules with severe epithelial cell injury and prominent casts, both proteinaceous (left) and cellular (right). H&E stain.

Bars: A,D 50 microns; B,C 25 microns

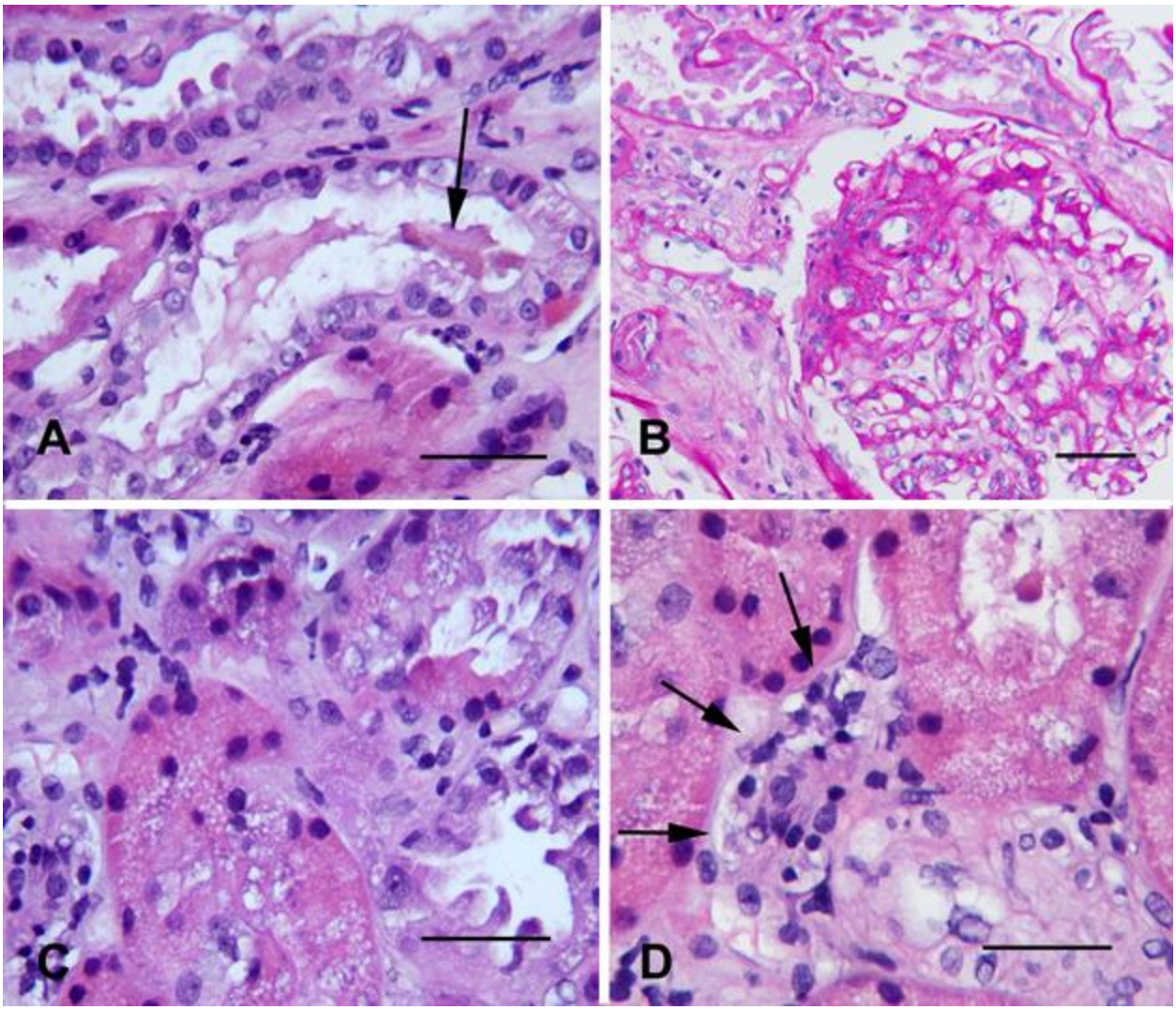

FIGURE 2: Additional light microscopy images D84Bx

A': Severe tubular injury with poorly formed protein cast (arrow). H&E stain. B': Glomerulus with hilar/perihilar segmental sclerosis. PAS stain. C': Diffuse acute tubular injury with marked cytoplasmic vacuolization, blebbing and reactive nuclear changes. H&E stain. D': Tubular injury and abnormal PTC (arrows) with swollen endothelial cells and associated mononuclear infiltrates.

Bars: 50 microns

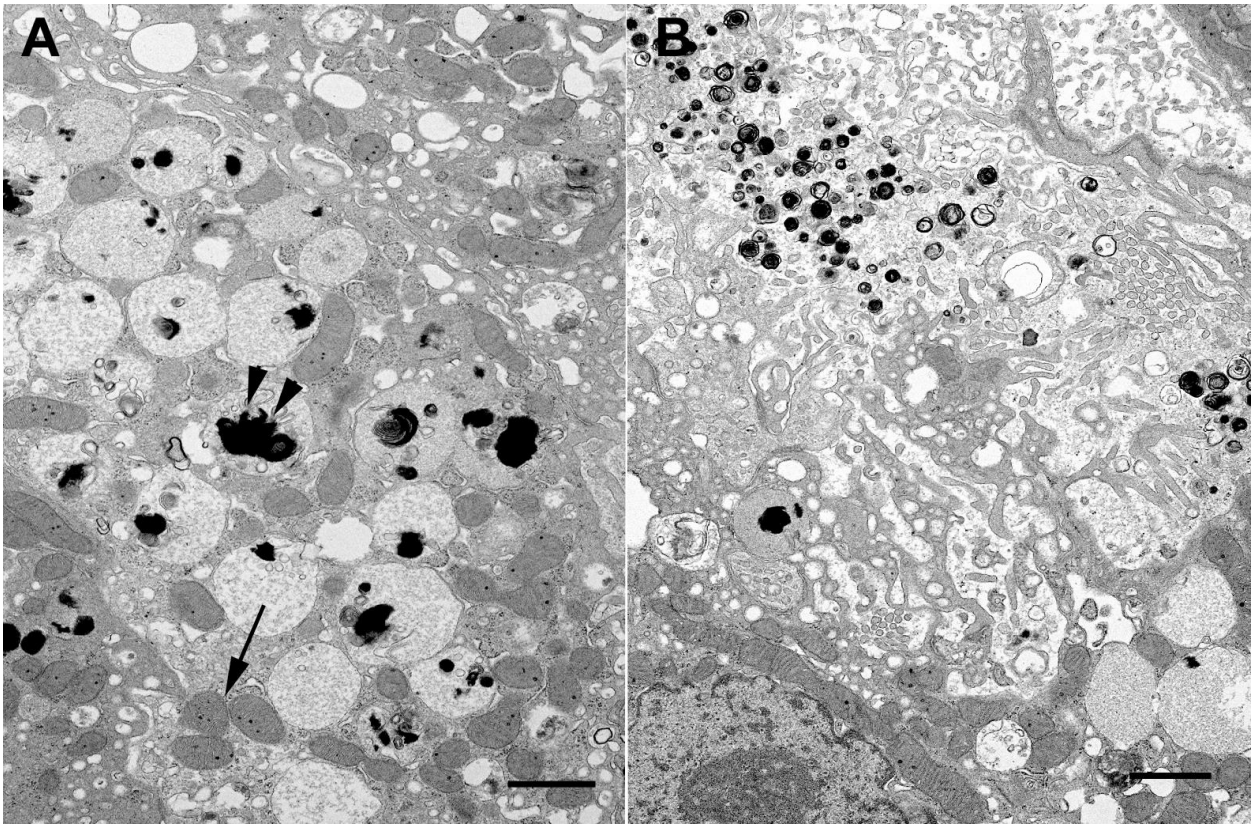

FIGURE 3: Additional electron microscopy images D84Bx

A: Tubular epithelial cell with marked mitochondrial condensation and prominent matrix granules (arrow). The remaining mitochondria are markedly swollen, with disappearance of the cristae, and formation of markedly electron dense aggregates, including membrane aggregates/myelin figures (arrowheads).

B: The tubular epithelial cell cytoplasm shows severe membrane disarray, including extensive microvesicular changes and complex interconnected membranous structures. Many of the vesicles and membranous structures merge with electron dense myelin figures (top left).

Bars: 1 micron

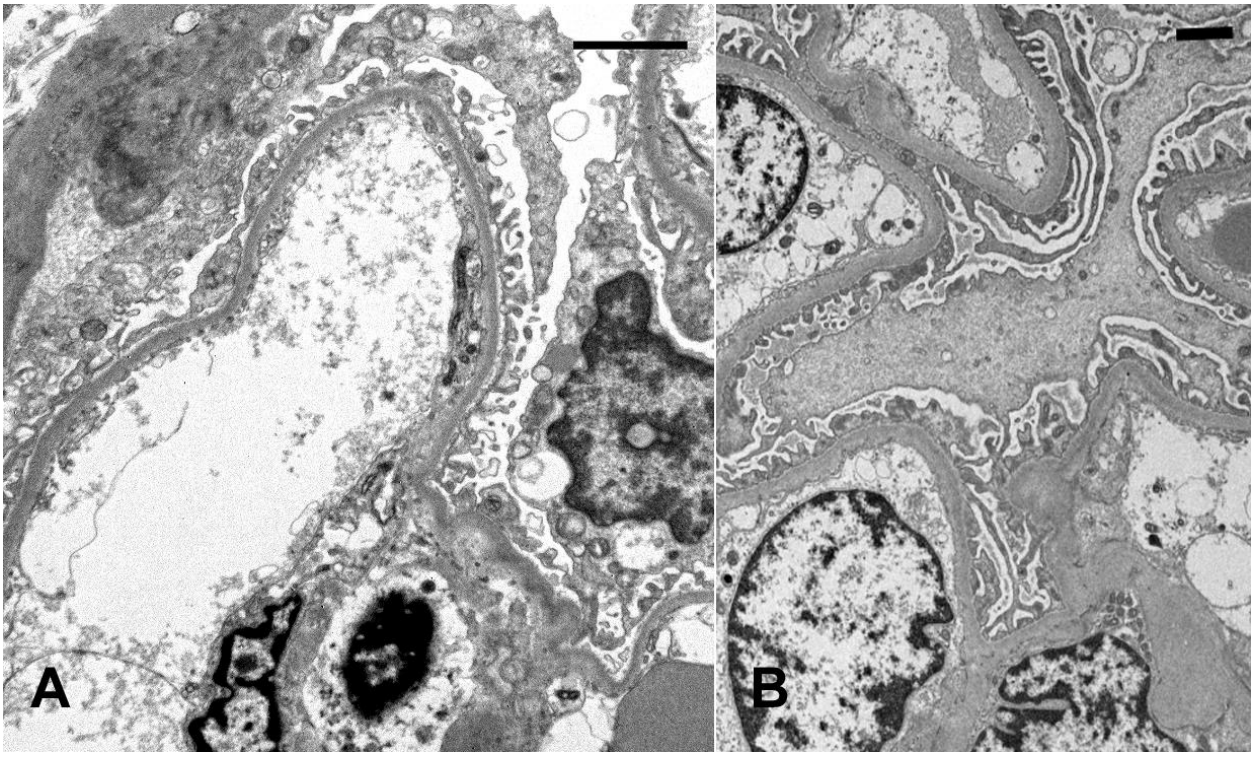

FIGURE 4: Electron micrographs of glomerular tufts

A, D10BX AND B, D84Bx

Electron micrograph demonstrates preservation of the foot processes of podocytes in most capillary loops in both biopsies. Preservation of the foot processes is consistent with the light microscopic finding of perihilar (secondary) focal segmental glomerulosclerosis in the D84Bx.

Bars: 2 microns

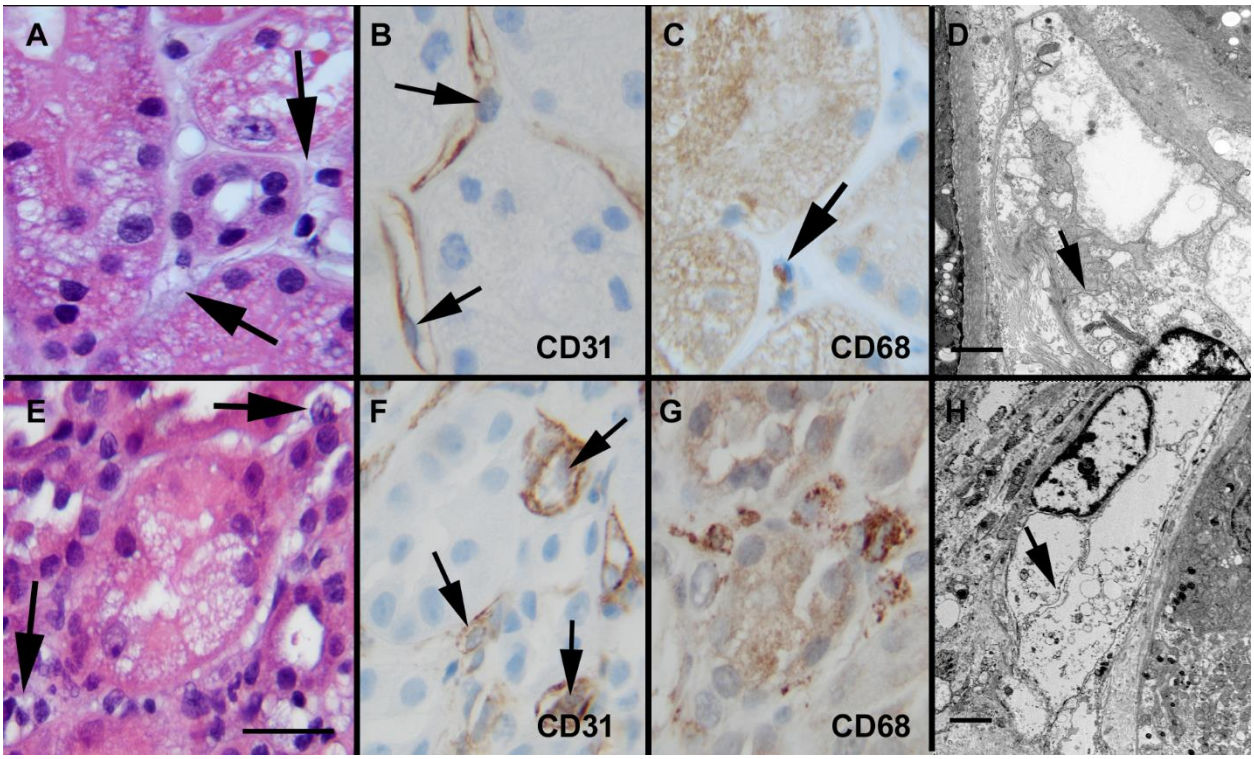

FIGURE 5: H&E, CD31,CD68 and electron microscopy of ischemic/toxic and sepsis related AKI without OSI

A-D AKI ischemic/toxic tubular cell injury

A: H&E stain demonstrates marked tubular epithelial cell injury. The PTC and endothelial cells are mostly inconspicuous (arrows). Mononuclear cells are not noted. B: CD31 immunostain shows delicate, well formed, slender PTC with normal to mildly enlarged endothelial cell nuclei (arrows). C: CD68 stain marks a single macrophage in the interstitium (arrow). D: Electron micrograph of PTC shows a swollen endothelial cell with otherwise preserved cellular membranes (arrow); there are no features of OSI seen.

E-H AKI in patient with bacterial sepsis, but no significant hyperinflammation laboratory parameters.

E: H&E stain demonstrates marked tubular cell injury and vacuolization. The PTC have prominent endothelial cells (arrows). There are mild interstitial inflammatory infiltrates. F: CD31 stain highlights the PTC lining with enlarged endothelial cells (arrows). G: CD68 stain highlights macrophage infiltrates in the interstitium. H: Electron micrograph of PTC shows very swollen endothelial cells but the membranes are overall preserved (arrow); there are no features of OSI seen.

Light microscopy: Bar 50 microns

Electron micrographs: Bars 2 microns

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