Chemiluminescence and Lymphocyte Transformation of Immune Cells in Experimental Uremia

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Dear Sir,

The letter by Dr. E.N. Wardle entitled 'Chemiluminescence and superoxide anions generated by phagocytes in uraemia' [Nephron 40: 379 (1985)] properly emphasizes that we know little about the role of uremia on immune cell functions.

During our studies on the pathogenesis of *Cryptococcus neoformans* and *Candida albicans* in experimental animal models, my colleagues and I have observed consistently that unfractionated spleen cells from uremic mice emit increased chemiluminescence and lymphocyte transformation when stimulated with a variety of mitogens or particulate antigens [4, 5]. We believe this to be the result of an excited physiologic state, perhaps a stress-related capacity to release above normal quantities of active oxygen compounds following stimulation. The increased chemiluminescence response may be misinterpreted as enhanced immune function; however, our studies have shown that the apparent increase in immune cell activity is not antigen-specific or protective to the host [4, 5, manuscript in preparation].

We also have demonstrated that spleen cells from both normal and uremic mice have reduced chemiluminescence and lymphocyte transformation responses when cultured in the presence of serum from uremic mice [4]. In these studies the suppressive effect of the uremic serum more than abrogated the 'enhanced' responses observed with the cells from uremic mice when cultured in normal serum. Other investigators have reported increased [1, 2], decreased [3] or normal [6] lymphocyte transformation responses of immune cells under uremic conditions.

These varied observations may be the result of different experimental techniques, and different cell sources and populations. It is apparent that much remains to be learned about the effect of uremia on host immunity. Precise tools such as chemiluminescence may help provide the answers we seek.

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