Renal Involvement in Paraquat Poisoning

M.		Segasothy
S.M.		Chong
S.T.		Kew
J.		Charlesworth

Departments of Medicine and Pathology, University Kebangsaan Malaysia, and Medical Unit, General Hospital, Kuala Lumpur, Malaysia; Renal Unit, Prince Henry Hospital, Sydney, N.S.W., Australia

Dr. M. Segasothy, Department of Medicine, Faculty of Medicine, University Kebangsaan Malaysia, Jalan Raja Muda, Kuala Lumpur (Malaysia)

Dear Sir,

There are some similarities in the clinical presentation of paraquat poisoning and Goodpasture's Syndrome in that in both these conditions there is involvement of the lungs and the kidneys. Anti-GBM antibodies are involved in the pathogenesis of Goodpasture's syndrome [1]. The pathogenesis of paraquat-induced acute renal failure is however not clear. Toxic or ischaemic insults have been implicated. In view of the similarity of the clinical presentation of these two conditions, and the fact that some cases of Goodpasture's syndrome have been caused by hydrocarbon solvents [2], led us to investigate whether the pathogenesis of paraquat-induced renal failure is similar to that of Goodpasture's syndrome.

16 patients with paraquat poisoning were studied. Blood for haemoglobin, renal profile, liver profile, complements (C3, C4), anti-nuclear factor (ANF), Rheumatoid factor, LE cells and anti-glomerular basement membrane (GBM) antibodies were taken. Renal biopsies were done and specimens looked at by light microscopy and immunofluorescent (IF) microscopy.

ANF, Rh. factor, LE cells done in 9 patients were negative. C3 and C4 done in 9 patients were normal. Anti-GBM antibodies done on all 16 patients was negative.

Of the 16 patients, 12 died and 4 are still alive. Renal biopsy was done on 10 patients. IF examination done on all 10 specimens did not show the linear pattern seen in Goodpasture's syndrome. Light microscopic examination showed features consistent with tubular damage.

There was no significant glomerular damage and crescents were not seen.

It is hence concluded that the renal lesions of paraquat poisoning are not similar to that of Goodpasture's syndrome and are not immune-mediated.

References

Lerner, R.A.; Glasscock, R.J.; Dixon, F.J.: The role of antiglomerular basement membrane antibody in the pathogenesis of human glomerulonephritis. *J. exp. Med.* 726:989 (1967).

Beirne, G.J.; Brennan, J.T.: Glomerulonephritis associated with hydrocarbon solvents. *Archs envir. Hlth* 25:365 (1972).