

EDITORIAL

Chronic Kidney Disease: Sickle Cell Nephropathy as a Likely Cause

S. Kadiri

Chronic kidney disease (CKD) and end stage renal failure (ESRF) are becoming increasingly prevalent in Nigeria and, indeed, worldwide. A recent article in *The Lancet* provides an excellent review of the topic [1]. They pose enormous problems to the patients and physicians alike for reasons which, in no small part, have to do with the lack of resources needed for their management. Even though community-derived figures are not available for Nigeria, the often quoted hospital admission rates of 6-8% of medical admissions suggest a substantial contribution of renal failure to overall morbidity and mortality. The treatment of ESRF relies on the availability of dialysis or renal transplantation. That transplantation is currently available in the country in only one or two hospitals and can cost over 3 million Naira and that haemodialysis, more widely available, costs well over 100000 Naira a month do not offer much relief. For the physician, a lack of adequate knowledge of the causes of CKD remains a problem. Nevertheless, several of the probable causes are known, and some of them are eminently preventable or treatable, for example hypertension, diabetes and some infection-related glomerulonephritides.

Much of the earlier work on CKD in the Tropics had focused on the infection related causes, especially malaria, schistosomiasis and later hepatitis B and C and most recently, HIV infection. Sometime, in the midst of these, hypertension also came to be recognized as a likely cause and in the last decade or so the role of diabetes mellitus has become very visible. Autosomal dominant polycystic kidney disease and other cystic diseases are increasingly being diagnosed no doubt owing, partly, to the now wide availability of ultrasonography. Oligonephropathy, which can be assumed to be a significant problem in the environment owing to poor ante-natal health and early childhood malnutrition, is arguably a likely contributor to the burden of CKD. As in other parts of the world, environmental lead pollution from car exhaust fumes cannot be overlooked as our roads become increasingly congested with cars. Sickle cell nephropathy is not an uncommon cause of CKD and is characterized by focal and segmental glomerulosclerosis, membranoproliferative glomerulonephritis although kidney involvement can also occur by way of infection, haematuria, tubular

dysfunction, papillary necrosis, acute renal failure and renal medullary carcinoma, a late complication [2]. Sickle cell disease was first described by James Herrick in 1910 although, according to folklore, a condition with a similar description had been known for centuries before in West Africa.

In this issue of the journal, a report from Cote d'Ivoire is published which attempts to determine risk factors for sickle cell nephropathy. With the increasing longevity more commonly associated with sickle cell disease, nephropathy, a relatively late occurrence, is more likely to be diagnosed. The chronic anaemia causes increased glomerular flows and focal segmental glomerulosclerosis. The nephropathy has also been linked with abnormal prostaglandin regulation, immune reactions associated with the common occurrence of infections in the condition, the exposed red cell stroma which is thought to bear some cross reactivity with the basement membrane. The use of erythropoietin, or its increase following renal transplantation, may not always be safe for, while it improves the anaemia, there can be an increase in the rate of thrombotic crises. The use of angiotensin converting enzyme inhibitors and angiotensin-II receptor blockers to reduce proteinuria, dialysis and transplantation in ESRF, are options in the management but overall prognosis often depends on some extra-renal disease. Bone marrow transplantation, especially when carried out early, offers the best prospects, but carries a small peri-operative mortality risk.

Given the daunting task, preventative measures, for now, offer the greatest hope in the battle against CKD.

*Professor Solomon Kadiri, Professor of
Medicine(Nephrology), Department of Medicine,
College of Medicine, University of Ibadan, Consultant
Nephrologist, University College Hospital,Ibadan,
Nigeria and Editorial Consultant, Annals of Ibadan
Postgraduate Medicine (AIPM).*

References

1. El Nahas AM, Bello AK. Chronic kidney disease: the global challenge. *Lancet* 2005; 365: 331-340
2. Ataga KI, Orringer EP. Renal abnormalities in sickle cell disease. *Am J Haematol* 2000; 63: 205-211