S-3-1  Hantaan virus infection (Korea Hemorrhagic Fever)
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Korea hemorrhagic fever (KHF) has a synonym as hemorrhagic fever with renal syndrome (HFRS) manifested with the cardinal triad which are fever, hemorrhagic petechia and renal impairment. Hanta virus is a subgroup of the family Bunyaviridae. It is maintained in nature in persistently-infected rodents and transmitted in infectious air of urine, feces or saliva. HFRS patients can be found not only rural areas but also in urban areas in many countries of Asias. The incubation period of HFRS is 2-3 weeks. The clinical course, can be divided into five subsequent phase on the basis of clinical data such as 1) febril, 2) hypotensive, 3) oliguric, 4) diuretics and 5) convalescent.

Clinical manifestations of HFRS for the diagnosis are variables from subclinical to severe. It needs to evaluate the clinical symptoms, signs, laboratory findings and epidemiologic history. The patients of HFRS complain a fever, chilling, myalgia and GI symptoms. Flushing face, petechia on soft palate or anterior upper chest or axilla and CVA tenderness are major signs of the moderate and severe cases.

Also, the patients shows hematuria, proteinuria, thrombocytopenia, leukocytosis and azotemia. Confirmation of this disease is based on demonstration of specific IgM Ab by ELISA or x4 or a greater rise in anti-Hantavirus Ab titer. HFRS has to be differentiated from other acute infection and hematologic diseases as 1TP, TTP with renal failure. There is no specific treatment for HFRS. Therefore the treatment of the patient may be supportive. Some patients need IV replace fluid to correct electrolyte imbalance. Dialysis may be necessary in the patient with severe renal failure. The mortality rate of HFRS in Korea is 2-7%. Primary shock, infection, ARDS and severe hemorrhage are main causes of death. Recovery from HFRS is commonly complete.

S-3-2  Preliminary observation on renal function alteration in patients with Dengue Fever in Vietnam
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690 patients (benign form: 664 cases; Haemorrhagic form: 26 cases) were hospitalized in Bach Mai hospital, Hanoi, Vietnam for the period from January 1998 to December 1999 with clinically and serologically based diagnosis Dengue Fever/ Haemorrhagic Dengue Fever (predominantly type III). The sex ratio male: female was 1.1: 1(male 370 cases, female 320 cases). The highest incidence of disease was observed in the age of 10 to 49 years old. The peak frequency of disease was from August to November of these years. Some laboratory findings related to renal function alteration such as proteinuria, haematuria, serum BUN and creatinine were observed but they were recovered completely. Conclusion: Dengue fever is a tropical infectious disease frequently seen in Vietnam sporadically or epidemically. In general the progression of disease is benign, the permanent renal lesions were not observed from the disease.

S-3-3  Malarial acute renal failure
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Malaria is widely spread throughout the world particularly in Africa, India, Southeast Asia and Latin America. The disease may affect the kidneys resulting in two major renal syndromes.

Chronic malarial nephropathy is a chronic progressive glomerulopathy that affects mainly African children classically complicating quartan malaria due to Plasmodium malariae. It may rarely be associated with Plasmodium vivax. The disease may present as a steroid resistant nephrotic syndrome with classical mesangial capillary glomerulonephritis on renal biopsy. The disease tends to progress to renal failure even after successful eradication of the infection.

Acute malarial nephropathy is classically associated with falciparum malaria. This complication is relatively uncommon affecting up to 4.8% of patients in endemic areas. However it is much more common in non-immune visitors to endemic areas with an incidence of up to 30%. The acute renal failure is frequently associated with jaundice, anaemia, thrombocytopenia and hyponatremia. Histologically the most common lesion is acute tubular necrosis although there may be interstitial nephritis and/or glomerulonephritis. Acute renal failure is a serious complication with a reported mortality of between 15% to 75%. The majority of patients require dialysis and mortality may be effectively reduced with early diagnosis accompanied by early aggressive treatment. Most cases of falciparum malaria are chloroquine resistant and intravenous quinine remains the most widely used treatment in serious complications with falciparum malaria. Alternative therapies include Fansidar and other agents such as Mefloquine, Quinghaosu alkaloids and Proguanil. Exchange transfusion may be helpful especially in those with heavy parasitaemia, severe jaundice and severe inflammatory response syndrome with an overall reduction in mortality.

S-3-4  HBV and HCV related glomerulonephritis
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Hepatitis B antigenemia has been associated with glomerulonephritis for more than 30 years. Hepatitis B virus (HBV) infection has a worldwide distribution. Asia is one of the endemic regions, although transfusion and drug abuse are important route for HBV infection, there is also vertical transmission from mother to infant and horizontal transmission between siblings in
endemic regions. It has been estimated that there are 120 million HBV carriers in China. HBV associated nephropathy mainly occurred in children, it could always been identified in adults in endemic regions as well. Majority of the HBV associated nephropathy are membranous nephropathy, especially in children and young adults, although mesangiocapillary proliferation, sclerosis and polyarteritis nodosa also have been commonly reported. The association of HBV related nephropathy and IgA nephropathy has been controversial. The glomerular lesions appear to be immune complex-mediated. In children, with mild HBV associated nephropathy, no treatment other than supportive care is advocated. In patients with nephritic syndrome and progressive renal dysfunction, interferon has been used with mixed results. Steroids used to control proteinuria still remain controversial. Nucoside analogues, including lamivudine (3TC), bis-POM PMEA (GS-840), Lobucavir, and BMS-200,475, have been clinically useful in treating HBV infection; their role in treating the nephropathy remains to be established.

Hepatitis C virus (HCV) infections were mainly transfusion-associated disease and its prevalence in China was 1-3%. Renal disease associated with HCV infection includes membranoproliferative glomerulonephritis, with or without associated mixed cryoglobulinemia and membranous glomerulopathy. Rare cases of diffuse proliferative and exudative glomerulonephritis, polyarteritis, and fibrillary and immunotactoid glomerulopathy also have been described in association with HCV. The pathogenesis of HCV-related nephropathies is also immune complex-mediated. Mixed cryoglobulinemia is associated with HCV and may cause a systemic vasculitis. A number reports demonstrated a beneficial response to interferon alfa therapy in patients with HCV-induced renal disease. Combination therapy with ribavirin and interferon has shown better response rates as initial therapy and in interferon alfa relapses.

S-3-5 HIV nephropathy

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It is estimated that more than 30 million people world wide are infected with the human immuno-deficiency virus (HIV) and about 16000 cases added every day. A variety of renal lesions are known to occur in AIDS (acquired immuno deficiency syndrome), a unique form of glomerular involvement called “HIV-associated nephropathy” (HIV-AN) has emerged as significant form of renal disease. In 1984 it was first described as a distinctive clinico-pathologic entity typically presents as heavy proteinuria and progresses rapidly to renal failure. Prevalence of HIV-AN is nearly 90 % in nephrotic HIV positive patients reported from New York and other urban east coast hospitals of USA. In contrast the same was found only in 2% in San Francisco where most sero positive patients were white homosexuals. The black/white ratio among patients with HIV-AN is12.1. The disease is reported more severe in blacks. Those patients who never used intravenous drugs of them only 17 % of whites had mild FSG, 75 % had diffuse mesangial hyperplasia (DMH) and none had severe FSGS. In contrast blacks had DMH only in 27 % and severe FSGS in 55 % associated with a more severe proteinuria and high incidence of neohrotic syndrome and greater degree of renal insufficiency. The disease is more common among IV drug users but the disease has occurred in other high risk group of patients namely homosexuals, infants of HIV infected mothers, heterosexuals and those exposed to contaminated blood products. Racial predisposition in blacks is probably explained by increased mutation of HIV receptors reported in them. Low CD4 count is associated with HIV infection however, there is no relationship between occurrence of HIV-AN and patient’s age, duration of HIV infection, malignancies of type of opportunistic infections.

In India incidence of HIV infection varies from 0.28 % to 2.64 % reported in March, 1999. Total number of known cases of AIDS reported were 7012 in March,1999 by National AIDS Control Organization.

In a consecutive biopsy and autopsy study among patients with AIDS and nephrotic syndrome, 85 % of biopsies showed features of HIV-AN, which included FSGS (40 %), mesangial hyperplasia (25 %) and collapsing glomerulopathy (20 %). Clinical and ante-mortem laboratory abnormalities suggesting renal disease were present in 9 out of 21 (43 %) AIDS autopsies. Of these 33 % presented with nephrotic syndrome and renal insufficiency, acute renal failure in 33 %, the rest 33 5 had gram negative septicemia and multiple opportunistic infections with terminal renal insufficiency. Another pathologic study revealed rather contrasting findings. In an autopsy analysis of 55 cases (20 with HIV infection and 35 with AIDS) 68.6 % cases of AIDS revealed infections such as renal tuberculosis (48.5 %), fungal (cryptococcus and candida) infection of kidney (14.4 %) and 5.7 % had CMV Infection. Other lesions were amyloidosis and renal tubular calcinosis. HIV associated nephropathy was not seen in any of the cases as none was an IV drug abuser according these authors.

In another study from a military hospital from Eastern India a total of 142 patients were reported HIV positive over a period of 4 years. Of these 25 (17.6 %) showed proteinuria and abnormal urinary sediment. None had nephrotic range proteinuria. Renal biopsy showed mesangiproliferative GN in 8 (32 %), FSGS in 4 (16 %) and collapsing glomerulopathy in 1 (4 %). Cryptococci were identified in 2 patients and one showed lymphomatous deposits on renal histology. Remaining patients showed normal renal histology.

In contrast in a consecutive screening of 1060 ESRD patients coming for hemodialysis at our center we did not observe a single positive patients. However, we had 4 HIV positive patients referred in last 10 years to us from other hospital, 2 for reinserterion of CAPD catheter and 2 had acute renal failure of which one was a heroin addict English man. Similar experience has been observed from PGI, Chandigraph which is another referral nephrology center in North India.