

## Review Article

# Nephrology Services in Libya, A literature Review

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Chronic kidney disease (CKD) is an impact on the public health issue globally and in Libya as well. Renal replacement therapy is completely covered by the public health care and the access to dialysis therapy for all patients with CKD is free. Health care expand dialysis services in terms of geographic coverage with increasing demand [1]. In contrast, Attention paid by the primary health care systems to combat the rising epidemic of chronic diseases has been inadequate [2]. Although, there is a lack of local information and no renal registry to gather national data, some studies and works have been done looking after the number of patients with CKD and the prevalence of the disease. Nationally, the first launched separate dialysis unite in Libya was in Benghazi (AlHawari) 1971, later on the second one was launched in Tripoli (Tajoura) on 1979.

A survey in 2009, found a total of 2417 patients (HD 2382, PD 35) distributed between 41 centers, with 61 nephrologists (nephrologist to patient ratio 1:40),

and 641 nurses (nurse to patient ratio 1: 3.7) [3]. Only 8 units had dietitians, and 6 units had social workers. Half the surveyed units operated 2 shifts a day, 27% one shift, 17% three shifts, and one unit operated 4 shifts daily. One hundred ninety-two hemodialysis rooms hosted 713 functioning hemodialysis stations, giving a ratio of one machine to 3.4 patients. Separate rooms were allocated for chronic viral infection seropositive patients in 92.5% of the units.

The 2007 Ministry of Health annual report showed that 25% of units provided dialysis for 20 patients or less. Predicted Numbers of Patients Akkari et al [4]. Wrote according to the Alashek and colleagues report, the Libyan dialysis population will continue to grow at a rate of 8% per year, from 2417 in 2009 to 7667 in 2024, Peritoneal dialysis populations may be expected to continue to drop by 5% per annum till 2014, when with re-launch of PD programs, the PD population will grow at 50% per annum

through 2019. The rate of growth will fall to 40% in 2010, and drop by 5% per year until 2024. PD as dialysis modality will account for 1.2% in 2014 and 16% of the total dialysis population by 2024.

### **Prevalence and Incidence of CKD in Libya.**

Alashek and colleagues reported the results of cross-sectional study of dialysis patients conducted in 2009 in Libya [3].

The estimated adult population of Libya during 2009 was 3,873,000, and the total number of CKD patients on dialysis was 2417 in 2009, giving a prevalence of dialysis-treated CKD of approximately 624 per million populations (pmp). The majority of dialysis patients were Libyan nationals (97.8% of prevalent). The prevalence rate varied slightly by region with the highest rate of 628 pmp in North West region, the most populated area of the country.

The prevalence of CKD varied considerably with age, the most prevalent patients were under 65 years of age (85%), in the 55–64 year age group at 2475 pmp for males and 2197 pmp for females and its low in young adults. The majority of patients with CKD in Libya are of economically active age and CKD therefore has a significant impact on families and society.

After age 74 years there was a sharp decline in prevalence and very few patients were over 85 years. Most prevalent patients on dialysis were white ethnicity (87%). However, ethnic distribution varied between regions with the highest black to white ratio of 1.9 to 1 in the South. The prevalence of dialysis-treated CKD was higher among males versus females at all ages. Overall, males represented 58% of prevalent dialysis population. Female patients tended to be older than males, except in the South. The incidence rate is 282 pmp. It varied between regions with a higher rate observed in the South, and is higher in males than females.

The incidence rate increased with age until it peaked in those aged 65–74 years and decreased sharply beyond age 75 years. Incident female patients were slightly older than male patients. Reasons for the high prevalence rate in Libya might include a high prevalence of CKD in the population and limited access to renal transplantation [5, 6]. Possible explanations for these observations include a high mortality rate on dialysis or rapidly increasing incidence of CKD.

### **Causes of CKD in Libya:**

The risk factors for developing chronic kidney disease (CKD) such as diabetes and hypertension, has a high prevalence

[7]. Moreover, economic and environmental transformation has contributed to people tending to adopt a sedentary life [8]. Diabetic kidney disease (26.5 %), chronic glomerulonephritis (21.1 %), hypertensive nephropathy (14.6 %) and congenital/hereditary disease (12.3 %) [9]. Like many other countries diabetic nephropathy was the leading causes of CKD in dialysis populations and was significantly more common among older patients. Glomerulonephritis was the second most frequent cause of CKD in Libya in cases and was significantly more common among young and male patients. Reasons for the high prevalence of glomerulonephritis is complicated by the shortage of histopathology diagnosis. A substantial proportion of CKD was attributed to hypertension but it is unclear what proportion of this represented hypertension secondary to primary renal disease. Congenital and hereditary kidney disease accounted for a significant minority of CKD in both prevalent and incident patients. This is likely due to the high rate of close marriages between relatives, especially first cousins, in Arab communities including Libya [10-12]. Limitations and incomplete medical records and lack of histology are difficulties to confirm the cause of CKD in the majority of cases.

### **The Hepatitis Problem:**

According to Alashek et al [13] report, over a third of prevalent patients were either HBV or HCV infected (HCV 31.1%, HBV 2.6%, both 1.2%). Although the prevalence of HBV and HCV infection in this study is rather similar to that in other countries in the region [14], It is of concern that only 4.7% of patients were known to be infected with HBV or HCV before starting dialysis. The reported overall sero-conversion rate is 7.7% (HCV 7.1%, HBV 0.6%) during the study period. HBV and HCV infection prevalence varied across the surveyed units from 0 to 75.9%, while HCV sero-conversion rates ranged between 1.5- 31% during the study period [13].

### **Renal transplantation in Libya:**

The transplantation program was launched on 1989. The program resumed its activity again on 2004; genetically and emotionally related living donor is the only available program for organ transplantation in Libya. The most common donor-recipient relationship was brother-to-brother. Mean donor age was 37 +/- 9.5 years (range, 18-56 years), while the recipient age was 37 +/- 13.6 years (range, 7-67 years). The recipients and the donors were mainly males [15]. Induction immunosuppressions used are methylprednisolone and basiliximab, while, maintenance therapy

with mycophenolate mofetil, cyclosporine, and prednisone. The latter was completely discontinued one month after transplantation [16]. Acute rejections are treated with methylprednisolone or methylprednisolone and

antithymocyte globulin. Cadaveric transplantations not yet established because of lack of adequate public knowledge and convince about cadaveric donations, and religious concerns [17]. This led to increase and prolong the waiting time.

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