elongated spermatids are recoverable in the testis. With this type of technology, we are faced with the difficulty in identifying immature germ cells in unstained fresh samples. Round cells are abundant in morselated testicular tissue of almost all azoospermia men, but difficulties arise in distinguishing under Hoffman or Normarski optics whether these round cells are haploid round spermatids, diploid spermatocytes or spermatogonia, or even somatic cells like Sertoli cells nuclei or Leydig cells. Various attempts have been made in order to identify specific subpopulations of immature germ cells for clinical purposes. Percoll gradient has allowed other authors to collect spermatids identified by staining and by evaluating haploidy using fluorescence in-situ hybridization.[4] More recently, a purified population of immature germ cells was obtained from the testicular tissue of azoospermic men employing germ cell separation using the modified discontinuous Percoll gradient technique. Fractions from 30-45% contained the highest concentration of immature germ cells and lowest leukocyte contamination.

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Etiology of end-stage renal disease in Najran, Kingdom of Saudi Arabia

With the availability of hemodialysis, patients with end-stage renal disease (ESRD) are living longer than ever. Many of the patients are enjoying, if not normal, a reasonable quality of health. In view of the high prevalence of diabetes[1] and hypertension[2] in the Saudi population, the magnitude of ESRD might reach epidemic proportions in the future. In order to ascertain the pattern of ESRD, we undertook a study of these patients that will serve as the baseline for a future reference. It will also help to complete the national level data in this country. To the best of our knowledge, there has been no such study so far from Najran, the southwestern province of the Kingdom of Saudi Arabia. This study was conducted on the registered patients of the Artificial Kidney Unit (AKU) of Najran General Hospital in the month of Rabbi-II 1421 (June 2000). Patients from all over the region are referred here. All patients with renal failure are followed here and undergo maintenance hemodialysis when needed. Non-Saudi patients are not dialyzed except by special permission or in case of an emergency. Data was collected under the following headings: name, age, sex, nationality and the underlying cause of chronic renal failure. We studied a total of 67 patients, currently registered in our unit undergoing regular hemodialysis. This total comprised of 37 males and 30 females (male-female ratio of 1.2:1). There were 29 Saudi males and 24 Saudi females ranging from 13 to 66 years (mean 39 ± 12.8 years in males and mean 38.51 ± 11 years in females). There were 7 patients less than 19 years, 10 patients between 20 to 29 years, 16 patients between 30 to 39 years, 8 patients between 40 to 49 years, 13 patients between 50 to 59 years and 13 patients more than 60 years. **Table 1** shows the underlying cause of ESRD in these patients. In our study there were mainly Saudi patients (53 out of 67). Out of the non-Saudi patients, the majority were Yemenis (12 out of 14). Yemen is the neighboring country and the population does not differ in culture,

Table 1 - Underlying cases of ESRD in Najran, Kingdom of Saudi Arabia.

Disease entity	Males	Females	Total (%)
Diabetic nephropathy	10	3	13 (19.40)
Glomerulonephritis	2	1	3 (4.49)
Pyelo-nephritis	2	5	7 (10.44)
Polycystic kidney disease	2	2	4 (5.90)
Collagen vascular disease	nil	3	3 (4.49)
Obstructive uropathy	2	1	3 (4.49)
Alports syndrome	4	none	4 (5.90)
Not established	15	15	30 (44.77)
Total	**37**	**30**	**67 (100)**

traditions, and food habits and possibly in genetic makeup. We believe that this sample is representative of the entire geographical zone rather than Najran province alone. Male to female ratio of 1.2:1 was found and ESRD patients showed a uniform distribution along the age scale with a slight peak in the age group of 30 to 39 years in males and 50 to 59 years in females. The cause of renal failure was slightly different in the 2 sexes. Alport's syndrome was responsible for ESRD in 4 of our male cases, with 3 of them belonging to the same family. Collagen vascular disease was responsible for ESRD in 3 of our female patients, compared to just 2 in males. Diabetic nephropathy was the largest category seen in males. Diabetes is very common in this province (unpublished data under evaluation). Approximately 20% of the adult Saudi population is diabetic[1] and this is showing an escalating trend. With a very poor level of awareness and self-care in diabetic subjects, the magnitude of diabetic nephropathy is expected to increase further in coming years. Needless to say the maximum number of patients had no basic diagnosis in our patients. Hypertension was common in this group of patients, which could be an important, if not the only factor causing or contributing to renal failure. This group of patients might also show an upward trend in the future. Common causes of ESRD in Asir Region[3] are glomerulonephritis followed by diabetes whereas in Gizan[4] it has been obstructive uropathy. Diabetes has also been reported to be the most common cause of ESRD in Madinah al Munawarah.[4] End stage renal disease is one of the most devastating diseases, and causes severe emotional, psychological and physical dysfunction to the patient and a considerable economic burden on the state. According to an estimate it costs 75,000 to 100,000 Saudi Riyals to provide hemodialysis for one patient for one year. Though hemodialysis is provided free of charges to all Saudi nationals, in view of an evolving epidemic of diabetes and hypertension, the magnitude of ESRD may increase very rapidly in future, for which we need to be mentally prepared.

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