and very carefully attached many lines to dialysate containers which were hung up quite high and connected to the cycler machine. Finally the main line was attached to the patient, who languished under a pile of sterile drapes. The whole connection process took close to an hour. I am not sure how long the dialysis took but he was certainly still connected by the end of my shift at 11 pm (no 2400 hour clocks in those days).

Another prominent memory, probably due to the frequency with which it occurred, was the overflowing of the sluice in the pan room. Most of these patients were anuric for heavens sake so how could so many bed pans need scrubbing? The enormous, ancient sluice sink, used mainly for soaking bed-pans took ages to fill. It was customary to turn on hot water taps to fill the sink and of course this took so long that it was usually only remembered as the water was seen seeping onto the carpet from the pan room, half an hour later. Thankfully peritoneal dialysis effluent was poured down an old ceramic drain, so the carpet stains were usually only from water!

The Charge Nurse was an enthusiastically and friendly as even then she tried to recruit nurses for future renal roles. I remember the entire staff there being supportive and encouraging with their teaching programs. But especially I liked the patients. I liked how we got to know them, treat them and finally send them home and perhaps not see them for a while; but the nature of renal illness dictated that they returned to us before too long, and then at least there was a familiarity which could be family like.

Unfortunately, by 1983 Sydney Hospital began its decline as a major teaching hospital. Many of its unique medical and surgical units were distributed to other hospitals. The renal unit was transferred to the Royal North Shore Hospital, and from those initial pioneering times the kidney transplant tally from both institutions was over 880 by the turn of the new century.

To this day my admiration for what renal patients endure has never waned, and from those humble Ward 17 beginnings it has always been a privilege getting to know the many wonderful, friendly and grumpy, stoical and irritable, brave and ultimately long suffering people who become renal patients.

Dialysis at Guys in the 1970s

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Abstract

Dialysis in the 1970s in Guys Hospital in London involved Dyalade B3 machines, plate dialysers, shunts and manual transmembrane pressure calculations. Patients were dialysed in beds, had haemoglobins of 70 and were very rarely over 65 years old.

Key Words

history, kidney, renal, nursing, dialysis, transplant

The heparin was injected into a bag of normal saline then, after a separate heparin bolus was given through the arterial needle and dialysis commenced, you would have to stand with a stopwatch to time the drips and turn a black wheel to alter the rate of the pump accordingly.

Nursing in the renal ward

Although I am now working in Australia my early memories at Guys in the 1970s were influential in my dialysis nursing journey. In 1977 I had been working on Astley Cooper, the renal ward at Guys Hospital in London as an enrolled nurse for a couple of years. All this time I had been watching the registered nurses from Bostock House, the haemodialysis unit, come into the ward to dialyse the acutely ill patients and had admired their skill in managing these massive and complex looking machines. It was partly due to these impressive nurses that I searched for a hospital where I could study for my registration and thus join them in years to come. However, after much searching with the support of my supervisor Liz Winder, it seemed that no hospital would take me because of my lack of 'O' levels. Liz then asked 'So, what do you want to do now?' I said 'I would love to try haemodialysis, it looked so interesting.' To my astonishment she agreed to allow me to fill a vacant position, making me the only enrolled nurse to be employed in the unit.

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Haemodialysis

I well remember my first day, standing in the doorway and watching all the girls running around setting up machines. I recall thinking that this was a mistake I will NEVER learn how to do this, it is way to complicated. I'd better go back to the ward and stop thinking I can handle things like this. Luckily, I was taken under the wing of Heather, one of the 'Sisters' (nurse unit manager) who taught me all the basics about setting up machines, needling, starting, running and terminating a dialysis treatment. Now to the real nitty gritty. It was OH, so different in those days!

The first machine I was trained on was a Dyalade B3. They had no integrated blood or heparin pump and the bubble trap was held on to a metal rod just under the dialyser with whatever tape was at hand. In fact, the only connection between the machine and the blood circuit was a venous pressure monitor. The blood and heparin were pumped by two red Watson Marlow pumps that stood on the top of each dialysis machine. The heparin was injected into a bag of normal saline then, after a separate heparin bolus was given through the arterial needle and dialysis commenced, you would have to stand with a stopwatch to time the drips and turn a black wheel to alter the rate of the pump accordingly. As you might imagine these pumps were not overly accurate and the pump insert sections of the heparin lines were known to come apart at times so clotted dialysers and/or bubble traps were a regular, not rare, occurrence. Spare bubble traps and dialysers were always easily accessible and when required a team of about three staff would be involved with priming new parts, clamping and cutting out the clotted equipment and putting in connectors to attach the new trap or dialyser.

When setting up the extracorporeal circuit we would cut the arterial line (yes, cut it….) and insert an injection port. We would then measure a given distance from the port (I'm afraid I can't recall how far that was now) and mark this with tape. Once the patient's blood was in the circuit we would inject air into the arterial line (yes, air……) and use a stopwatch to time how long it took to get from the injection port to the tape and that way we knew how fast it was going in mls per minute. My recollection is that we ran most patients at 200 mls/min.

Patients dialysed for eight hours on long Gambro flat plate dialysers. The shape of these dialysers later changed and became shorter with the corners cut off to improve blood flow. These dialysers became known as 'coffins' because of their appearance.

Access was primarily provided via arteriovenous fistulae with a fair number of arteriovenous shunts thrown in for good measure. I was used to de-clotting shunts on the ward so this was not something that presented a problem for me in the dialysis unit.

The patients had beds rather than chairs to rest on and the dialysate lines were much longer than today although they may have had a much narrower bore. I recall patients frequently moving off their beds and going to their neighbour and sitting down for a chat.

Transmembrane pressure (TMP) was certainly used but it was artificially created by the staff, not calculated by the dialysis machine. There was a knob on the machine that would be used to create 'suck' by kinking the return dialysate line inside the machine and thus causing back pressure. Also we would apply a gate clamp to the venous line to again cause some back pressure in the dialyser. The combination of venous pressure and 'suck' negative pressure was our TMP.

Blood transfusions were a regular event as this was well before erythropoiesis stimulating agents (ESA). It still amazes me how well most of the patients functioned with haemoglobins of around 60-70, which is what we transfused them *up* to.

Most patients were young, meaning under 65 years of age. Our first 65 year old caused quite a stir but did amazingly well, always seemed happy and had a good quality of life for about a year while on haemodialysis.

When we went to the wards to provide acute treatment things were quite different. There we used Travenol RSP machines and they were to stay in use for quite some time in my dialysis career. They were old when I started training but were easy to use and the coil dialysers gave a good 'tight' (low heparin or heparin free) dialysis. They rarely seemed to clot. The dialysate was made by staff attaching a hose to a tap and pouring tap water into a large tank and then adding powders and liquids of potassium, acetate and other assorted goodies. The conductivity was then checked with a metre. It was easier to add more water than to add more powders so we would aim initially for too high a conductivity rather than too low. Once a correct reading was obtained, the dialysate was pumped up to the 'header tank' where it was warmed and passed through the dialyser which had a rather attractive water fall appearance (especially if there was a blood leak……).

As much as there were some very good dialysers, I do have a very vivid memory of walking into the unit for a late shift and seeing a nurse standing on a chair with a mop over his head, wiping the ceiling. A coil had exploded sending blood and dialysate everywhere. In my second haemodialysis job I was introduced to the Kiil dialyser which was by that time used almost exclusively for home haemodialysis patients although there were enough of them in the chronic unit to keep the staff knowledge base up. I was taught how to strip and rebuild a Kiil by the AKAs (artificial kidney assistants) who were employed by many units. Building a Kiil could be a strangely soothing job although frustrating if you had forgotten to put the blood ports in or to cut the holes for the dialysate flow in which case it would not pass its pressure test.

Home patients, of which there were quite a number when compared to the in centre patients, dialysed overnight thrice weekly. This way many of them held

down a job. If they had no spare room to dialyse in, a porta-cabin was dropped into the back garden and water and electricity connected.

As I progressed through the years of my dialysis career in the United Kingdom the machines became more refined and automated. I recall the Lucas machines we used at Guys, they came in a very attractive blue or orange colour and more up to date Dyalades where home patients could leave the lines and dialyser on the machine, clean them out with water, then sterilise them and be ready to rinse and reuse. Then came the Cobes and the Gambros.

On reflection, our patients survived despite us rather than because of us, and I have to say that it has been a privilege to have been working in dialysis for so long and to have the experiences I have had.

There is even a degree of envy toward those who have been around about 10-15 years longer than me. What tales they have to tell! I sometimes feel sorry for staff coming new to dialysis where everything is computerised and worked out for them. However, I know that if they are still around in 20-30 years, they will be looking at the youngsters and saying "you don't know you are born, why, in my day".

Recollections of a renal nurse in the 1970s

Paton, P. 2009 Historical Reflections: Recollections of a renal nurse in the 1970s *Renal Soc Aust J 5*(2) 75-76

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Abstract

This paper describes renal nursing of people receiving haemodialysis and peritoneal dialysis in Sydney in the 1970s.

Key Words

history, renal, peritoneal dialysis, haemodialysis, nursing

Most patients vomited during and after dialysis and suffered headaches and severe cramps

Renal nursing in 1974 when I started at Sydney Hospital was challenging but very satisfying. Patients were young, often yellow and very sick. Nobody over the age of 60 years received dialysis as there were only six machines! Imagine a renal ward without Erythropoietin, beta blockers or angiotensin-converting enzyme (ACE) inhibitors.

In 1974, Ward 17 at Sydney Hospital had a Nightingale style renal and haematology ward, with a verandah off it which housed the six haemodialysis machines. Team nursing occurred with a registered nurse and two student nurses (usually a 3rd year and a 1st year) responsible for 14 patients, including two patients in reverse barrier nursing and a laminar flow bed because of chemotherapy for haematological conditions. Another registered nurse and one student nurse were responsible for the other 10 patients, including one who was being reverse barrier nursed. Student nurses were trained by the hospitals with blocks of time put aside for teaching. During this teaching time the wards were minus those nursing hours. A postgraduate six month renal course commenced at Sydney Hospital in 1972. My student nurse training had provided me with minimal renal knowledge (that I remembered) so I enjoyed doing this course in 1974.

Hypertensive crises were common with encephalopathy and patients often experienced fits. Hypertensive patients had the head of their beds propped up with 12 inch bed blocks. Blood pressure was lowered dramatically with the use of intravenous Diazoxide. I recall medication trials of Clonidine, then beta blockers, plus more recent diuretics. I recall that the only diuretics used in the early days were Lasix and Aldactone. Medication rounds were long and nightmarish. However, there were less options in medications. The first parathyroidectomies were done without Dihydrotachysterol. We gave intravenous calcium, and did Chvostek's sign tests to the cheekbone to ascertain low calcium levels. Emergency blood results were not very fast.

Analgesic nephropathy was rife. Patients presented and re-presented with sloughed papillae and obstructed ureters, with the Bex/Vincent powders in their lockers,

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