

**A STUDY OF PATIENTS WITH DIABETES RECEIVING RENAL  
REPLACEMENT THERAPIES: THE EFFECT OF DIALYSIS MODALITY ON  
GLYCAEMIC CONTROL.**

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**PROBLEM:** Patients receiving Peritoneal Dialysis seemed to have higher Glycated Haemoglobin (HbA1c) levels than their Haemodialysis counterparts.

**PURPOSE:** To find out if there were specific reasons for this from a renal replacement therapy point of view, rather than just looking at the individuals glycaemic control.

**DESIGN:** The collection of this HbA1c data centred on the recording of one set of HbA1c results, taken at the haemodialysis monthly blood collection and when peritoneal dialysis patients attended the dialysis clinic. Glycated haemoglobins are obtained approximately three monthly. Of a total dialysis population of approximately 400, 79 patients (22% of the total dialysis population) at this unit have diabetes, 56 (71) receive haemodialysis and 23 (29%) receive peritoneal dialysis. This was set at the time the study was undertaken.

**FINDINGS:** The findings of the study primarily showed that 33 (59%) of the haemodialysis patients achieved the target HbA1c of below 7%, whereas only 3 (13%) of the peritoneal dialysis patients achieved the target. Secondary findings showed that of the haemodialysis patients, 45 (80%) achieved a HbA1c range of <7.0-8.0% and 13 (23%) achieved a range of <7.0-8.0% and 9 (39%) achieved a range of 8.1->10.0%.

**CONCLUSION:** The Glycated Haemoglobin results, if no other considerations are taken into account, seem to suggest that haemodialysis is the modality of choice for patients with diabetes to enable them to achieve the target HbA1c of below 7%. Whereas peritoneal dialysis may be seen as an unsatisfactory treatment modality for patients with diabetes trying to achieve the target HbA1c. The reason for these differences is not entirely due to poor individual glycaemic control, but partly caused by the treatment modalities themselves. Patients receiving haemodialysis seem to have an unfair advantage over their peritoneal dialysis counterparts because of the shorter survival of red cells and other complex mechanisms, which contribute to a lower HbA1c, whereas peritoneal dialysis patients have to contend with glucose loading from the dialysate fluid resulting in higher blood glucose levels.

**RELEVANCE:** The relevance of this study to Nephrology care is that patients receiving peritoneal dialysis need more intensive management of their diabetes if the target HbA1c, as set out in the National Service Framework for Diabetes, is to be met. Nephrology Services at the unit where this study was undertaken, do not yet have the expertise to offer these patients intensive management for their diabetes. This is an area of nephrology care that needs to be addressed in the future.