Effect of Hemodialysis on Blood Glucose Level

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ABSTRACT
The study targeted the evaluation the effect of hemodialysis on blood glucose in renal failure patients at Shendi town in Sudan during (January–February) 2013.

To estimate blood glucose level pre and post hemodialysis.
1. To identify the blood glucose level pre and post hemodialysis.
2. To identify the effect of duration of hemodialysis.
3. To identify the risk factors that cause hypoglycemia during hemodialysis.
4. To identify the people prone to hypoglycemia during hemodialysis.

Across sectional descriptive study, conducted at Shendi town during the period from March to May 2015 that aimed to estimate blood glucose in renal failure pre and post dialysis. The study was done at Shendi town which is located in the north of Sudan and north of the capital Khartoum located about 173km and covering area about 30km. total of 30 sample pre dialysis, and 30 sample post dialysis was collected from renal failure patients in hospital.

Patients were collected in performed questionnaire. 2.5 ml of fresh venous blood was collected from each patient pre and post dialysis in fluoride oxalate container for determination of glucose level. For the quantitative determination of glucose in serum and plasma Glucose oxidase method was used. The statistical analysis of the results showed that the mean of glucose is lower in post hemodialysis (84.5) mg/dl. While the mean of glucose in pre hemodialysis (117.8) mg/dl. The P value is 0.000 which means that there is a highly significant variation between pre and post, where the values are high in post, and this agrees with Study done by Miho Senda et entitled (The strong relation between post – hemodialysis blood methylglyoxal levels and post-hemodialysis blood glucose concentration rise.Clinical and Experimental Nephrology, 20 Aug 2014). From this research we concluded that the level of blood glucose in renal failure patients is decrease post hemodialysis, which means there is a clear effect of hemodialysis on blood glucose level.

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Hypertension
Prephral neuropathy
Effect of renal failure on carbohydrate metabolism

Insulin is catabolized by and to some extent excreted via the kidneys. For this reason, insulin requirements in diabetic patients decrease as renal failure progresses. By contrast, end-organ resistance to insulin is a feature of advanced renal impairment resulting in modestly impaired glucose tolerance when a standard glucose tolerance test is carried out.

Methods

Study design
Across sectional descriptive study, conducted at Shendi town during the period from March to May 2015 that aimed to estimate blood glucose in renal failure pre and post dialysis.

Study area
The study was done at Shendi town which is located in the north of Sudan and north of the capital Khartoum located about 173km and covering area about 30km.

Study population sampling
A total of 30 sample pre dialysis, and 30 sample post dialysis was collected from renal failure patients in hospital.

Data collection tools
Information from dialysis patients were collected in performed questionnaire.

Collection technique
2.5 ml of fresh venous blood was collected from each patient pre and post dialysis in fluoride oxalate container for determination of glucose level.

Method used
For the quantitative determination of glucose in serum and plasma glucose oxidase method was used.

Results

Table No (3-1) show the blood glucose level in renal failure patient pre and post hemodialysis

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Number</th>
<th>Significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre hemodialysis</td>
<td>117.8</td>
<td>30</td>
<td>.000</td>
</tr>
<tr>
<td>post hemodialysis</td>
<td>84.55</td>
<td>30</td>
<td>.000</td>
</tr>
</tbody>
</table>

Results
The statistical analysis of the results showed that the mean of glucose is lower in post hemodialysis (84.5)mg/dl. While the mean of glucose in pre hemodialysis (117.8)mg/dl. The P value is 0.000 which means that there is a highly significant variation between pre and post, where the values are high in post.

Discussion
The statistical analysis of the results showed that the mean of glucose is lower in post hemodialysis (84.5)mg/dl. While the mean of glucose in pre hemodialysis (117.8)mg/dl .The P value is 0.000 which means that there is a highly significant variation between pre and post, where the values are high in control, and this agrees with Study done by Miho Senda et al.,20 Aug 2014.

Conclusion
From this research we concluded that the level of blood glucose in renal failure patients is decrease post hemodialysis, which means there is a clear effect of hemodialysis on blood glucose level.

References