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Correlation between urea reduction ratio and phosphate removal during hemodialysis

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Case Study: Correlation between urea reduction ratio and phosphate removal during hemodialysis
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Introduction: Control of serum phosphate levels is an important management aspect in end stage renal disease. Hemodialysis is one of the options to achieve this. However, it might not be as good as urea removal, considering differences in removal kinetics..
Objective: To determine if phosphate removal during HD is as effective as urea removal
Methods: This observational study was done on 1st july 2020 patients on maintenance HD from July to December. Exclusion criteria included initial three sessions in new starters and unwilling patients. All patients had serum samples collected before and immediately after completion of HD session, using standard technique. Urea and phosphate reduction ratios were calculated and compared by linear regression..

Results: HD sessions were monitored in 75 patients (53 males and 22 females) with a mean age of 53.45 ± 13.90. During the three and a half hour long sessions, urea reduction ratio was greater than phosphate reduction ratio 70.15 ± 11.68 vs 52.48 ± 15.40. There was a weak but statistically significant correlation between the two (R: 0.233, p=0.044).

Conclusion: Phosphate reduction during haemodialysis can be reliably predicted using urea reduction ratios.

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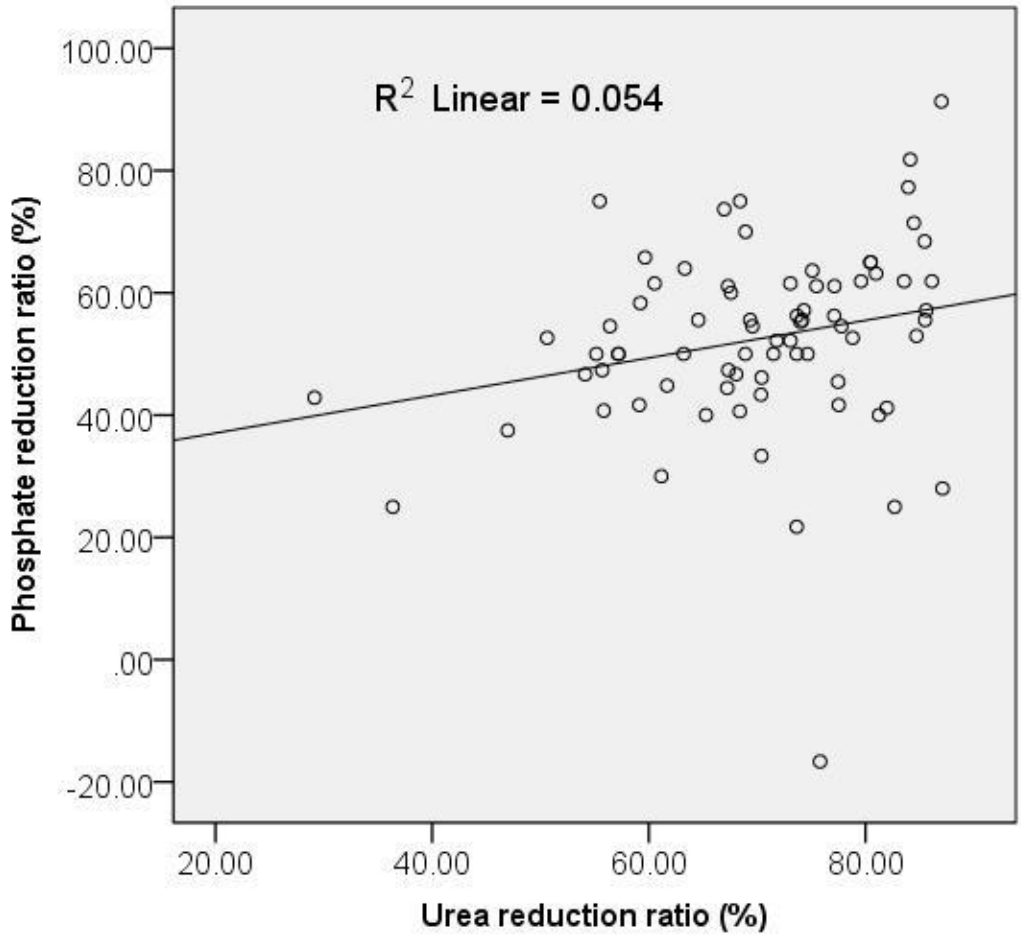
fig 1


R^2 Linear = 0.054
Phosphate reduction ratio (%)
100.00
80.00
60.00
40.00
20.00
.00
-20.00
20.00
40.00
60.00
80.00
Urea reduction ratio (%)