

HYPOMAGNESEMIA IN THE PATIENTS ON CHRONIC HEMODIALYSIS - THE ROLE OF PROTON PUMP INHIBITORS

Mikolasevic I, Milic S, Stimac D, Racki S, Pavlovic D, Lukenda Zanko V, Gulin M, Klaric D, Orlic L
Croatia

BACKGROUND

We investigated the association among long-term proton-pump inhibitors (PPIs) use with serum magnesium (Mg) levels in chronic hemodialysis (HD) patients, as well as possible association among PPIs use and increased risk of cardiovascular (CVD) morbidity in HD patients.

METHODS

Of 418 HD patients that were screened for inclusion, 136 were excluded due to incomplete medical data, duration of renal replacement therapy (RRT) for less than 12 months, use of Mg-based-phosphate binders or other Mg-based medications or either to presence of chronic increased GI losses. Among 282 patients included in the study, 170 patients were on PPIs.

RESULTS

Serum Mg levels were significantly lower among PPI users vs. non-users (0.94 ± 0.2 vs. 1.03 ± 0.2 mmol/L; $p < 0.0001$). The median duration of PPIs use was 27 ± 9.6 months (range from 12 to 108) and it was not significantly associated with Mg levels ($r = 0.116$; $p = 0.167$). Additionally, residual renal function didn't show significant correlation with Mg concentration ($r = -0.102$; $p = \text{NS}$) in both groups of patients. The use of PPIs was an independent and strong predictor of low Mg concentrations even in multivariate analysis (OR 3.05; 95%CI 1.2498-7.4594, $p = 0.01$). On the other hand, the daily dose of PPIs was not associated with low Mg levels. PPIs users had higher rate of adverse CVD events during the one year of follow-up in comparison to non-PPIs users but that difference wasn't statistically significant (17.6% vs. 10.7%; $p = 0.110$).

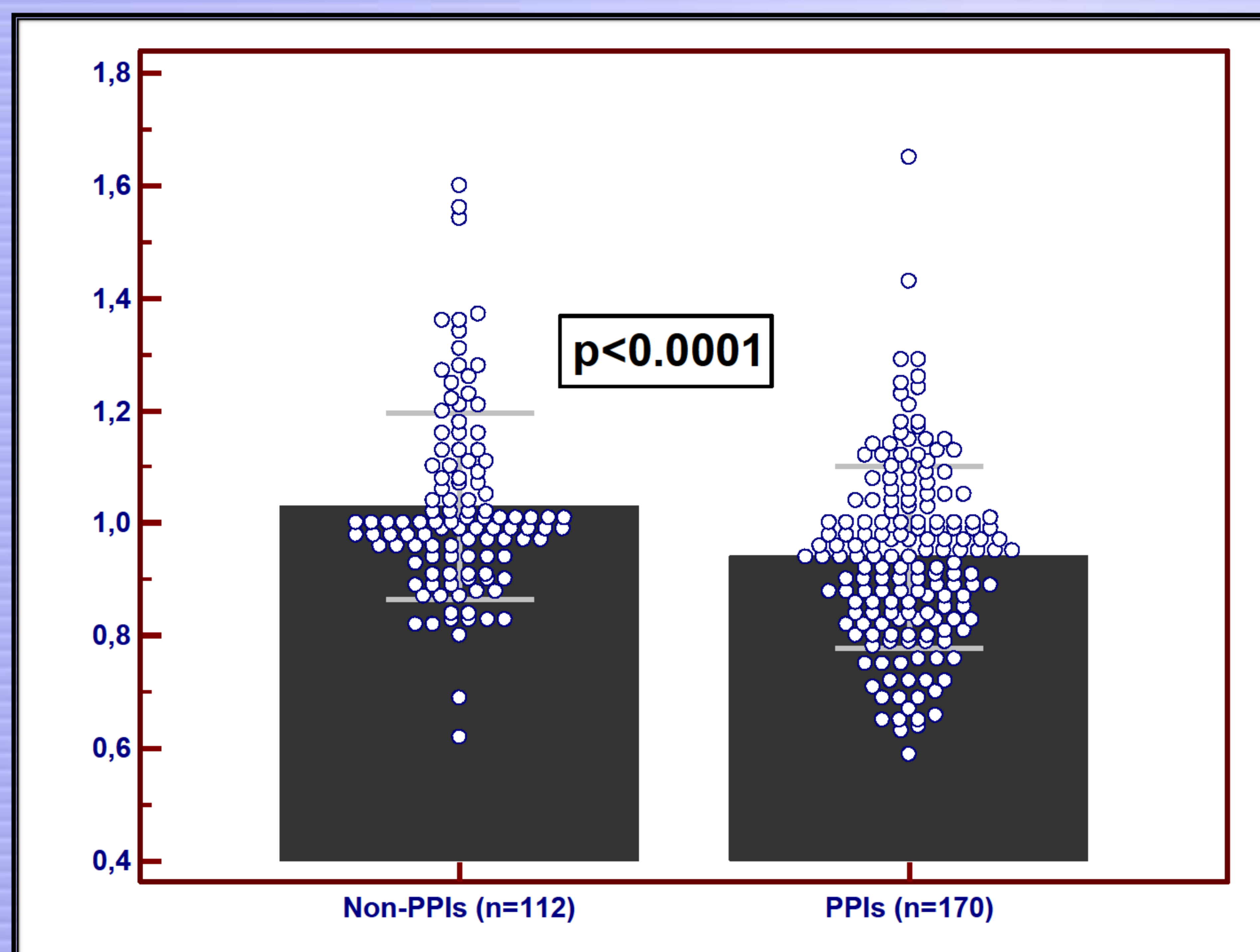


Figure 1. Serum magnesium concentrations in PPIs users and non-PPIs users
Proton-pump inhibitors (PPIs)

CONCLUSION

We have found a significant association between PPIs use and lower serum Mg levels in chronic HD patients.

