Hypomagnesemia Post-Percutaneous Coronary Interventions

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Introduction

Nearly a million patients undergo percutaneous coronary interventions (PCI) in the United States every year.[1] These patients are at high risk for arrhythmia, which can be precipitated by electrolyte imbalances, such as hypokalemia or hypomagnesemia.[2] The effect of PCI or contrast used on these electrolytes post-procedure has not been well studied.

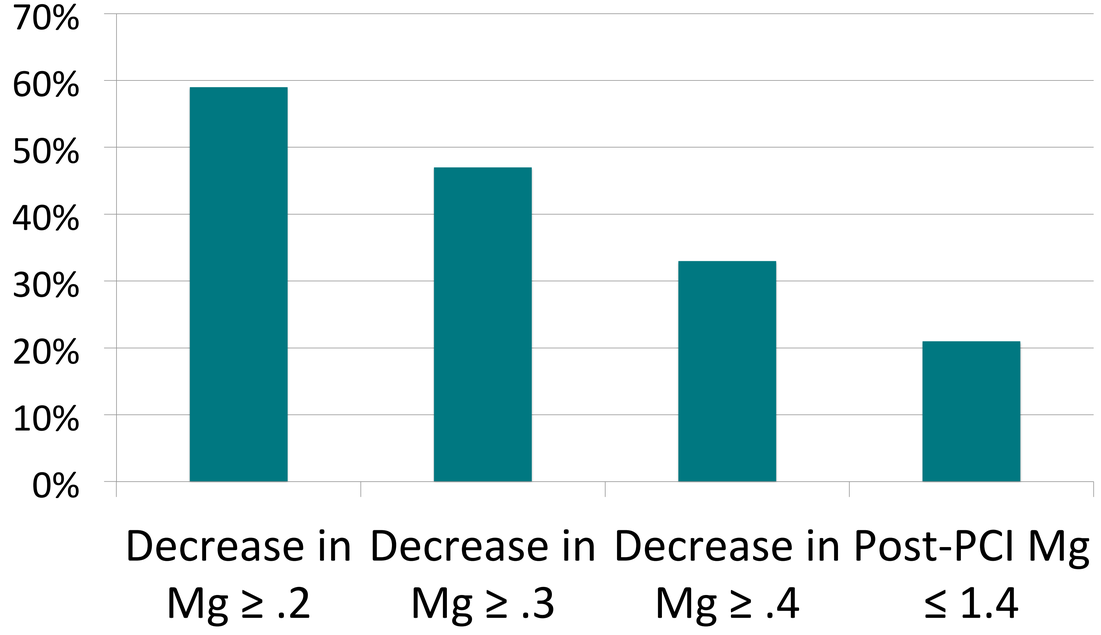
Methods

We retrospectively analyzed the charts of 426 consecutive patients who had serum magnesium levels checked within two days pre-PCI and within two days post-PCI from January 2010-July 2015. Normal serum magnesium level in our lab was 1.4-2.0 (mEq/L).

Results

Of the 426 patients, 139 (33%) had a decrease of 0.4 mEq/L or more. Ninety (21%) patients had post-PCI serum magnesium levels ≤ 1.4 mEq/L.

Figure 1. Percent of Patients with Post-PCI Hypomagnesemia



Conclusions

Despite PCI, the risk of arrhythmia in these patients remains high, especially in the immediate post-procedure period. If untreated, hypomagnesemia post-PCI could precipitate arrhythmia in such high-risk patients. If confirmed in a larger series of patients, this new observation could necessitate a post-PCI check of electrolytes in all patients to minimize the risk of arrhythmia. The pathophysiology of hypomagnesemia post-PCI would need further elucidation.

References

1. Epstein AJ, Polsky D, Yang F, Yang L, Groeneveld PW. Coronary revascularization trends in the United States, 2001-2008. JAMA. 2011;305(17):1769-76.
2. Efstratiadis G, Sarigianni M, Gougourelas I. Hypomagnesemia and cardiovascular system. Hippokratia. 2006;10(4):147-52.