Currently, there are no medical guidelines that recommend a magnesium replacement strategy for patients with hypomagnesemia in the emergency department (ED).

Hypomagnesemia is defined as a serum magnesium level ≤ 1.9 mg/dL.

The purpose of this study was to evaluate differences in ED length of stay (LOS) between patients receiving intravenous (IV) or oral magnesium, as well as ED re-visit and inpatient hospital re-admission rates.

Low magnesium can be caused by alcohol use, diarrhea, polyuria, and malnutrition.

If untreated low magnesium levels can lead to cardiovascular effects, migraines, and other serious health issues.

This study is a retrospective, IRB approved, chart review of 200 patients at a tertiary academic center in Springfield, IL from May 5th, 2023 to September 1st, 2023.

Patients 18 years or older were included and assessed for magnesium level, serum creatinine, dose of IV and oral magnesium, and LOS (minutes).

Patients were excluded if received both IV and oral magnesium or had a diagnosis of COPD, asthma, torsades de pointes, migraine, pre-eclampsia, or atrial fibrillation.

Data was analyzed using descriptive statistics, pearson chi square test, and two-sided t test.

A difference was found in LOS between the IV and oral magnesium groups. Oral magnesium can decrease the LOS in the ED.

There was no difference in rate of ED re-visit and inpatient re-admission between the IV and oral magnesium groups.

The average dose was 2 g over 2 hours in the IV group and 400 mg in the oral group.

Study limitations included reaching 100 patients in the IV group before the oral group and the severity of illness was not assessed.

A larger patient population and multicenter study is recommended.