

Purpose

Injectable hydralazine is a vasodilator FDA-approved as an alternative treatment for hypertensive emergency and has no approved indication for use in hypertensive urgency. Patient safety concerns exist regarding the use of injectable hydralazine, such as prolonged hypotension and reflex tachycardia. A single center drug utilization evaluation revealed that only 36.1% of doses were administered to patients experiencing a blood pressure (BP) $\geq 180/120$ mmHg, the BP threshold used as part of the diagnosis of a hypertensive crisis. Additionally, post-dose BP monitoring was performed according to institution guidelines for only 61% of administered doses. This information revealed opportunities for improved patient safety through increased appropriate use and monitoring of injectable hydralazine. To address these patient safety concerns, utilization guidelines were developed and supporting medication order questions were added to the electronic medical record (EMR).

Methods

This was a single center, quasi-experimental chart review study that included patients greater than or equal to 18 years old that were administered at least one dose of injectable hydralazine. Patients in the pre-implementation group were compared to patients in the post-implementation group. The implementation was the introduction of utilization guidelines for injectable hydralazine and supporting medication order questions within the EMR. The primary outcome was the percentage of injectable hydralazine doses administered to patients with a BP $\geq 180/120$ mmHg. The secondary outcome was the percentage of injectable hydralazine doses with post-dose BP monitoring performed according to institution guidelines.

Results

The utilization guidelines and supporting medication order questions resulted in a 2.3% increase in the proportion of doses given to patients with a pre-dose BP $\geq 180/120$ mmHg (36% vs 38.3%, $P = 0.584$). There was an 8.8% increase in the percentage of doses that met post-dose BP monitoring criteria in the post-implementation group (50.8% vs 59.6%, $P = 0.041$).

Conclusions

Implementation of utilization guidelines in tandem with supporting medication order questions for injectable hydralazine resulted in no difference in the proportion of doses administered to patients with a BP $\geq 180/120$ mmHg. However, the implementation did increase the proportion of doses that met the institution-specific post-dose BP monitoring criteria.