Abstract

Objective: The purpose of this study was to evaluate whether a new anticoagulation management program resulted in better monitoring of warfarin, increased warfarin patient education prior to discharge, and fewer bleeding complications associated with warfarin. Methods: A retrospective chart review was conducted of patients who were inpatients and received warfarin from April 1, 2008 to July 31, 2008 (control group) and from April 1, 2009 to July 31, 2009 (after implementation of the new anticoagulation program). The frequency of warfarin-related laboratory orders that included international normalized ratios (INRs), complete blood counts (CBCs), and documented patient education by pharmacy, nursing, and dietary services were determined before and after program implementation. Also, data was collected to determine frequencies of bleeding complications associated with warfarin.

Results: There were 112 patients in the pre- and 115 patients in the post-program group. After implementation of the inpatient warfarin management program, obtaining baseline INRs increased from 74% to 90% (p=0.001). Orders for baseline CBCs increased from 85% to 94% (p=0.026). Obtaining CBCs every 3 days increased from 54% to 74%, (p<0.001). However, there was no significant change in orders for daily INRs (p=0.055). Education by nursing increased from 54% to 80%, (p<0.001), by pharmacy increased from 8% to 76%, (p<0.001), and by dietary increased from 11% to 79%, (p<0.001). Documentation by all three disciplines in each patient increased from 3.6% to 59%, (p<0.001). Significantly fewer patients received vitamin K and/ or fresh frozen plasma for supratherapeutic INRs with bleeding complications after the program was initiated compared to baseline (p=0.009). Conclusion: The implementation of an inpatient warfarin management program led to better monitoring of patients receiving warfarin, and increased patient education. However, a larger and longer assessment is necessary to determine if these changes are maintained and how these changes affect long-term clinical outcomes.

Keywords

Warfarin, Inpatients, Pharmacy Service, Hospital, United States.