

Screening Duplex Ultrasonography in Neurosurgery Patients Provides No Benefit in Preventing Pulmonary Embolism or Reducing Mortality

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Introduction

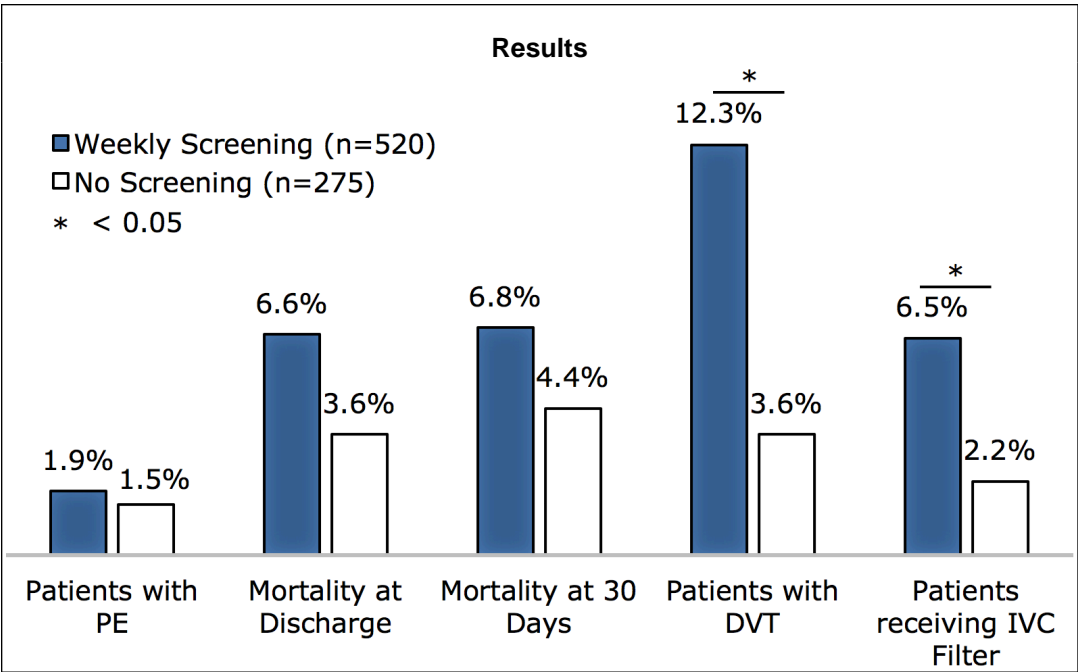
Deep vein thrombosis (DVT) is a major focus of patient safety indicators and a common cause of morbidity and mortality. Many practices, including our own, use screening ultrasonography to reduce poor outcomes. However, its role in reducing pulmonary emboli (PE) and mortality is unclear. A recent hospital policy change provided the opportunity to compare independent groups: patients treated under a prior paradigm of weekly screening ultrasonography versus a post-policy change group where weekly surveillance was no longer performed.

Methods

1934 consecutive patients were reviewed, with a two-month washout period around the policy change. Criteria for inclusion were admission to the neurosurgical service or consultation for > 72 hours and hospitalization for > 72 hours. Primary outcomes examined were the rate of PE diagnosis, all-cause mortality at discharge and 30 days, DVT diagnosis rate, and IVC filter rate. Power analysis demonstrated a 91% power to detect an absolute difference of 5% in PE rate, with an alpha of 0.05. A p value < 0.05 was considered significant.

Results

Of the 1934 reviewed patients, 520 met criteria for the pre-group and 275 for the post-group. All data are presented as percentages and pre versus post.



Conclusions

Based on these data, there does not appear to be an identifiable benefit to screening patients. While the pre-group had significantly higher rates of DVT diagnosis and IVC filter placement, the screening, additional diagnosis, and subsequent interventions did not appear to improve patient outcomes. Ultimately, this makes screening difficult to justify.

References

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