

QI project evaluating the Vitamin D assessment rates in patients with Fragility Fracture

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Background

Low vitamin D levels are associated with osteopenia, osteoporosis and increased risk of sustaining a fracture. US studies of vitamin D deficiency prevalence in hip fracture patients report rates from 50-65.8%. Hip fractures are associated with an 8-36% increase in mortality within 1 year; 20% require long-term nursing home care and only 40% fully regain their pre-fracture independence level. Risk of future fractures increases by 2.5-fold after occurrence of a hip fracture. Endocrine society guidelines recommend screening patients with fragility fractures for vitamin D deficiency. We aimed to increase the rate of Vitamin D level check in patient age > 50 years admitted with fragility hip fracture by 10 % in 9 months.

Method

Data was obtained through Slicer Dicer health data tool from hospital EMR. We conducted two PDSA cycles. For 1st PDSA cycle we collected baseline rate of Vitamin D level check in patients above 50 years of age admitted with fragility fracture. We added new geriatric hip fracture order set containing automatic Vitamin D level check in EMR as intervention. For PDSA cycle 2, we collected post intervention Vitamin D level check in similar population.

Results

- PDSA 1- At baseline, among 88 patients admitted with hip fracture in 3 months, 65 had fragility hip fracture. 10 out of 65 (15%) had Vitamin D level checked within 1 month of fracture.
- PDSA 2- Post intervention- Among 268 patients with hip fracture in 3 months, 238 had fragility fracture. Out of 238, Vitamin D level was checked in 80 patients (33.60%)
- Hence, after using new geriatric hip fracture order set which included Vitamin level check, rate of Vitamin D level checked increased from 15 % to 33.60 %.
- We were not able to assess whether geriatric hip fracture admission order set was used, or Vitamin D level was checked separately.

Conclusion

- QI project helped in assessing the major factor for fragility hip fracture and hence helped in early treatment.
- Clinician should recognize the importance of checking Vit D level in fragility fracture and treat low Vit D level to prevent future fracture.