

REASON WHY?

NOF fractures are one of the most common reasons for admission to an orthopaedic ward, with ~75000 cases per year in the UK, and are associated with an increase in mortality & morbidity. Risks and complications, including further fragility fractures, could be reduced with the use of a single IV dose of zoledronic acid, a type of bisphosphonate, followed by two weeks of vitamin D & calcium supplementation which can increase bone density for up to 2 years.

PLAN

With a significant number of patients presenting with NOF fractures to the orthopaedic ward, there has been a focus on ensuring that eligible patients receive an intravenous infusion of ZA, in accordance with the newly updated orthogeriatric guidance which has been approved at SaTH and uploaded to the intranet (early April 2023). To raise awareness of the update, the guidelines were summarised and a printout was clearly displayed on the notice board within the Ward 4 doctors' office. This was done in addition to a briefing held amongst the senior members of the orthogeriatrics department i.e., consultants and speciality registrars, at the point that the newly updated guidelines were initially approved and adopted.

Two datasets evaluating the number of NOF fracture patients receiving ZA were collected, one before and one after the release of the new guidance, in order to assess if the aforementioned intervention was effective in raising awareness of ZA eligibility and ultimately an increase in the number of eligible patients receiving ZA.

DO

Once the guidelines were released and published to the SaTH intranet in early April 2023, Trauma and Orthopaedic Ward 4 Doctors were made aware via a printout distributed on the office noticeboard.

Consultant and registrar orthogeriatricians were also made fully aware of the new guidance with a formal update, as they are ordinarily responsible for prescribing bone protection plans.

Data regarding the number of ZA dispenses for Ward 4 patients was kindly provided by the pharmacist team. This data was then cross checked with a list of NOF fracture patients, which was provided by the senior trauma nursing team (data originally collected as part of the Best Practice Tariff quarterly status report).

The data obtained was for a two week period both prior to, and then following the release of the guidelines on the aforementioned intervention. By comparing the data for the two periods, we were able to assess the effectiveness of the new departmental guidelines, which aimed to increase the number of patients receiving ZA and in turn, reduce mortality and morbidity.



Guidance was recently approved and uploaded to the SaTH intranet (early April 2023), stating that high risk NOF fracture patients or those unable to tolerate oral bisphosphonates are more likely to benefit from a single 4mg infusion of zoledronic acid followed by 2 weeks of calcium & Vitamin D supplementation, with an overall aim of increasing bone density and reducing risk of further fragility fractures by ~50% by 10th May 2023.

STUDY

During the final 2 weeks of February (14/02/2023 to 28/02/2023), we saw a total of 29 NOF fracture patients, 4 of which received ZA (13.79%).

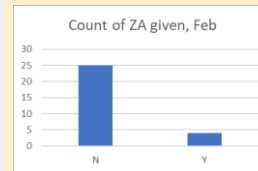


Figure 1: 4 NOF fracture patients from a total of 29 admissions, over the 2 weeks 14/02/2023 - 28/02/2023, who received and did not receive ZA on Ward 4, PRH.

After the guidance was implemented and the interventions were in place, during 2 weeks in April (14/04/2023 to 28/04/2023) we noted a total of 13 patients (65.0%) were given the infusion, out of the 20 NOF fracture patients that were admitted in this period

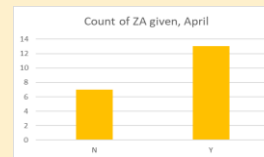


Figure 2: Following intervention (publication of updated guidelines), over the 2 weeks 14/04/2023 - 28/04/2023, there was a marked increase in the number of ZA issues for NOF fracture patients on Ward 4, PRH. Out of the 20 patients admitted, 13 received the infusion.

We saw an overall increase of approximately 371% (or 4.7x). With further statistical analysis, the P value was found to be <0.05, at a confidence interval of 95% which demonstrated that the interventions were associated with a statistically significant increase in the number of ZA dispensing.

ACT

After the guidance was implemented and awareness was raised, we saw that there was an overall increase in the number of patients receiving ZA.

Going forward, juniors rotating into the department would need to be made aware of this guidance and where on the intranet to find the complete publication- which could be done as part of departmental teaching.