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Pericardiocentesis in thrombocytopenic cancer patients

Authors:
M Lee1, C Gill1, A Serauto Canache1, T Donisan1, D Balanescu1, N Marah1, D Stone1, J Stone1, D Boone1, F Cervoni Cure1, A Agha1, C Iliescu1, N Palasks1, 1University of Texas MD Anderson Cancer Centre - Houston - United States of America,

Topic(s):
Cardio-Oncology

Citation:

Background: Pericardial effusion is a known complication in cancer patients, resulting in chest pain, cardiac tamponade, and cardiogenic shock. Although technological advances allow for early detection, treatment options are limited for those also suffering from thrombocytopenia.

Purpose: Our study aims to evaluate survivorship of thrombocytopenic cancer patients who underwent pericardiocentesis.

Methods: From 2008 to 2019, we assessed overall mortality and follow-up post-pericardiocentesis in cancer patients with concurrent thrombocytopenia (< 150,000 cells/microliter) at our cancer center. Thrombocytopenia grading was determined on the procedure day via serology platelet cell count with the following thresholds: Grade 1 (< 50 x 10³cells/mL), Grade 2 (51-100 x 10³cells/mL), and Grade 3 (101-149 x 10³cells/mL).

Results: In 137 patients, we identified 65 (47%) patients with Grade 1, 30 (22%) with Grade 2, and 42 (31%) with Grade 3 thrombocytopenia. The calculated platelet count average was 66 x 10³cells/mL, median was 59 x 10³cells/mL, and range was 6 to 147 x 10³cells/mL. Of note, 7 (5%) patients had platelets < 10 x 10³cells/mL. One patient developed a hematoma at the percutaneous site of pericardial drain, no other complications were noted. Kaplan Meier survival analysis by log-rank (mantel-cox) showed statistical significance (p=0.025). Comparatively, the cumulative survival of patients at 30 days was 63% in Grade 1, 67% in Grade 2, and 83% in Grade 3 patients. At one year, it was 26% in Grade 1, 37% in Grade 2, and 48% in Grade 3 patients.

Conclusion: Pericardiocentesis offers rapid symptomatic relief and can be life-saving in cardiac tamponade. In cancer patients, the development of pericardial effusions and thrombocytopenia increases due to the underlying malignancy and cancer therapeutics. Although thrombocytopenia is thought to increase peri-procedural risks, in this cohort there was only one minor complication and this occurred in Grade 2 thrombocytopenia. For thrombocytopenic cancer patients suffering from large pericardial effusions, high pre-operative risk scores often exclude them from receiving surgical pericardial windows. Although mortality was higher in severe thrombocytopenia, this is likely due to the competing risk of more severe cancer; there were no complications with Grade 1 thrombocytopenia. Especially noteworthy, no complications in those with platelets <10,000 cells/µL. Our study shows that in this population of patients, pericardiocentesis is a feasible intervention with low complication rate to help improve quality of life and potentially life-saving treatment.
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