

Arrhythmia Burden in Patients with Indolent Lymphoma

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Introduction

Indolent Non-Hodgkin lymphomas (NHL) comprise a group of diseases including marginal zone lymphoma (MZL), lymphoplasmacytic lymphoma (LPL), chronic lymphocytic leukemia (CLL), and follicular lymphoma (FL). These disorders frequently measure survival in years due to the long natural history of disease. Frequency and morbidity of arrhythmias in patients with indolent lymphoma is unknown, but recent observations note that arrhythmias are an increasing problem. Due to advances in treatment for indolent NHL, combined with an aging population/long natural history, understanding of arrhythmia burden in indolent lymphoma is an area with important implications for patients undergoing active treatment/long term survivors.

Methods

Patients 18 or older with indolent NHL treated at the University of Rochester between 2013-2019 were included in the Cardio-Oncology Lymphoid Malignancies Database and analyzed. The primary objective was to define the rate of arrhythmic events and sudden cardiac death (SCD) in patients with indolent lymphoma during treatment. Arrhythmias including ventricular, atrial, and bradyarrhythmias were identified. Kaplan-Meier analysis was used to assess cumulative probability of arrhythmia.

Results

There were 918 patients diagnosed with indolent lymphoma. Diagnoses included: CLL (414), FL (284), MZL (144), LPL (76). Median age was 64, 43% were female. There were 383 patients who received treatment. There were no significant differences in baseline characteristics between treated/never treated patients. At diagnosis, 101 (11%) had prior history of arrhythmia. During median follow up of 24 months, 168 patients (18%) developed a new or recurrent arrhythmia. Sixty-three of 168 patients had both prior history of/recurrence of arrhythmia, 105 had a new diagnosis of arrhythmia. Atrial fibrillation (Afib) was the most common arrhythmia, in 81 patients (9%). At 6 months post-diagnosis, cumulative probability of developing any arrhythmia was 8% (Figure 1). Of all arrhythmias, 89/168 occurred in CLL, 35/168 in FL, 17/168 in LPL, 27/168 in MZL. Arrhythmias occurred in 4/95 patients receiving chemotherapy, 12/95 receiving monoclonal antibodies/immunotherapy, and 28/95 receiving targeted therapy. Most arrhythmias (51/95; 53.6%) occurred in patients receiving combination therapy. Overall, there were 80 (9%) deaths. Ten deaths were related to cardiovascular diseases; of which 8 were from SCD.

Conclusions

This real-world cohort demonstrates that patients with indolent lymphoma could have an increased risk of cardiac arrhythmias that is increased by treatment. Afib was the most common arrhythmia identified in this study and appears increased compared to the

incidence in the general age matched population (1-1.8 per 100 person-years). Surprisingly, of 80 deaths, 8 (10%) were attributed to SCD. This data set contributes important information that can help identify patients at increased risk of cardiovascular morbidity and mortality that can impact treatment. Prospective monitoring in these patients may better define the incidence and associated risks of arrhythmias. Future directions will focus on risk factors for arrhythmias and developing an approach to prevent and treat arrhythmias in this patient population.

Figure 1: Cumulative probability of any arrhythmia or sudden cardiac death in study population

