



FEBRILE NEUTROPENIA IN PATIENTS WITH AGGRESSIVE LARGE B CELL LYMPHOMA AND DIABETES MELLITUS

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Background & Objectives

Epidemiological studies suggest that patients with diabetes mellitus (DM) are at-risk for developing several types of cancers, including non-Hodgkin lymphoma¹

Patients with DM are more susceptible to infections and to the development of a complicated infectious episode²

We aimed to examine whether comorbidity with DM as well as diabetic control affect the risk of febrile neutropenia (FN) and complicated course of FN

Materials & Methods

Single centre retrospective study conducted at the Institute of Hematology, Davidoff Cancer Center, Rabin Medical Center.

Consecutive adult patients diagnosed with aggressive large B cell lymphoma who started frontline treatment with R-CHOP or “R-CHOP like” regimens in our institute between 2013 and 2017 were included.

Demographics, disease-related outcomes and laboratory data were extracted from EMR

Primary & Secondary Outcomes

Primary outcomes

- Rate of admissions with FN
- Survival of patients with DM

Secondary outcomes

- Rate of complicated course of FN [duration of hospitalization, need for intensive care unit (ICU) admission, death during hospitalization or within 30 days of hospitalization]
- Response to therapy and relapse rates

226 patients with aggressive large B cell lymphoma:

- 219 (96%) with diffuse large B cell lymphoma
- 5 with primary mediastinal B cell lymphoma
- 2 with anaplastic large B cell lymphoma
- Treated with frontline treatment with R-CHOP or R-CHOP-like chemo-immunotherapy

49 patients (22%) had type 2 DM

None had type 1 DM

The median age and BMI of patients with DM were higher compared to the patients without DM (Table 1)

Table 1: Baseline characteristics of the study population			
	Lymphoma patients with DM (N = 49)	Lymphoma patients without DM (N =177)	P value
Median age (range)	70 (46-87)	65 (20-93)	0.001
Sex n (%)			
Male	27 (55%)	88 (50%)	0.5
Female	22 (45%)	89 (50%)	
Median Body Mass Index , (range)	27 (20-44)	25 (15-46)	0.06
Stage N (%)			
I	3 (6%)	20 (12%)	0.4
II	8 (17%)	26 (15.5%)	
III	10 (21%)	21 (12.5%)	
IV	27 (56%)	100 (60%)	

Results

Response to therapy, relapse rates and survival outcomes were similar in patients with DM compared to non-DM patients

There were 129 hospital admissions due to FN in the entire cohort. Patients with DM had higher mean admission rates due to FN compared to patients without DM (Fig. 1)

The admission rate in patients with DM remained higher after age and gender-matched subgroup analysis (P = 0.005)

Higher levels of maximal blood glucose levels during hospitalization correlated with longer duration of admission, in both diabetic and non-diabetic patients

Duration of hospitalizations and number of admissions to the ICU were similar in patients with or without DM

In patients with DM, improved glycemic control during hospitalizations due to FN was associated with shorter hospital stay

Use of metformin was associated with an improved overall survival in diabetic patients (Overall survival not reached, compared to 43 months)

Conclusions

Patients with aggressive large B cell lymphoma and DM had higher rates of hospitalizations due to FN

Improved glycemic control during FN admission was associated with shorter length of hospitalizations

The positive effects of metformin in our study cohort may warrant further investigation.

References

1.Castillo J.J., Increased incidence of non-Hodgkin lymphoma, leukemia, and myeloma in patients with diabetes mellitus type 2: a meta-analysis of observational studies. Blood. 2012 May 24;119(21):4845-50.

2. Geerlings, S.E., Immune dysfunction in patients with diabetes mellitus (DM). FEMS Immunol Med Microbiol, 1999. 26(3-4): p. 259

Figure 1. Lymphoma patients with DM are more likely to be admitted due to FN.

