

EVALUATING ADVERSE EVENTS COSTS IN CANCER PATIENTS IN LEBANON FROM TWO PAYER PERSPECTIVES

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BACKGROUND & INTRODUCTION

The cost of treatment of cancer in Lebanon increased from 17.5M in 2008 to 42.2M\$ in 2013. This increase is alarming and it took only into account the cost of medication.¹ The adverse events that may incur in such treatments were not taken into account, and there are no data on the cost of adverse events in Lebanon nor on its management.

OBJECTIVES

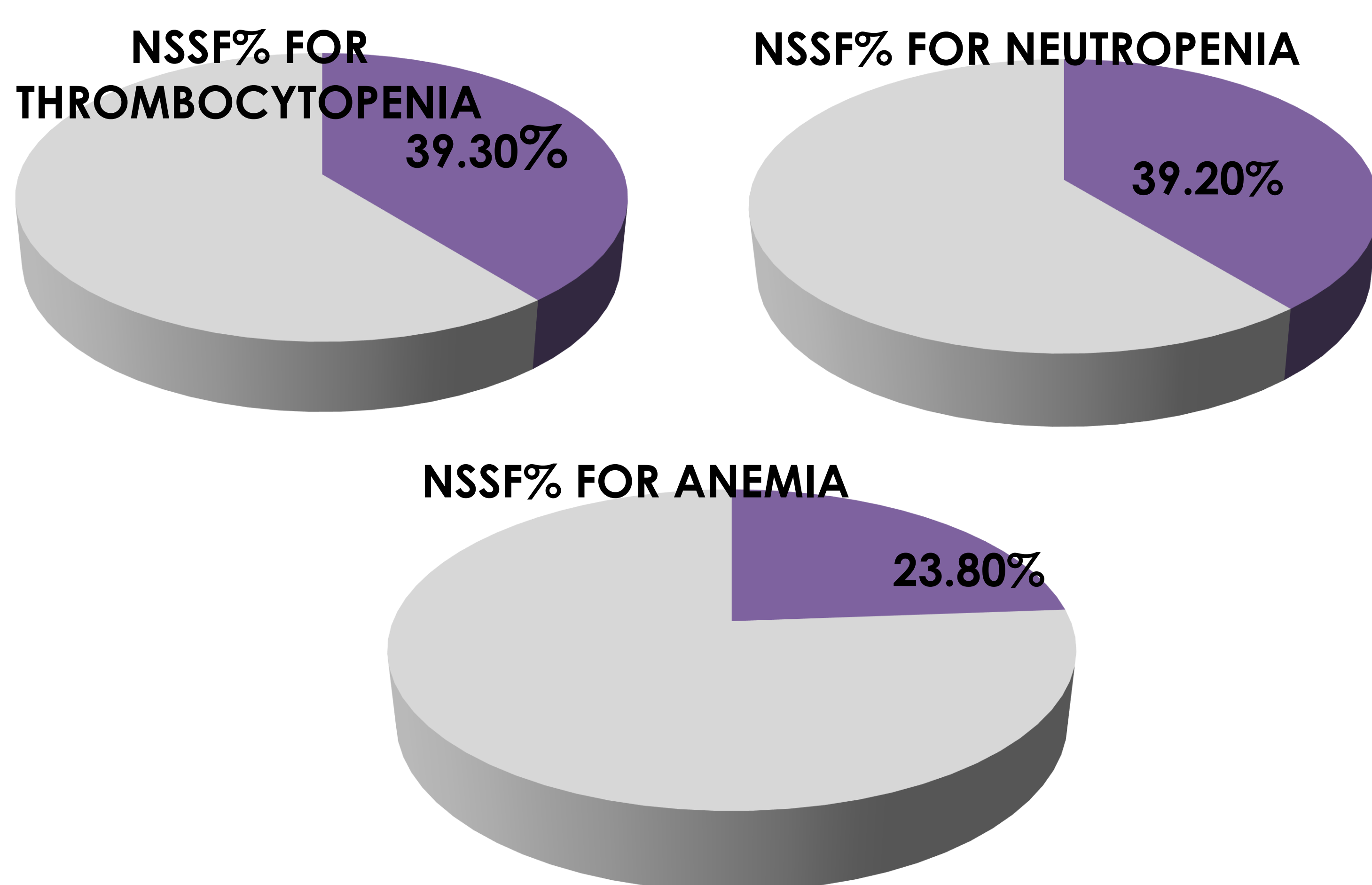
The objective of the study was to evaluate the cost of adverse events that cancer patients encounter in Lebanon in a real world setting from private and public sector payer perspectives.

METHODS

Claims data was retrieved from a third-party payer (GlobeMed). This payer represents 30-40% of the private insurance companies in Lebanon² of whom 38% of adherents have complementary National Social Security Funds (NSSF) insurance. The NSSF sector, in turn, represent 28.6% from the total healthcare sector in Lebanon.³

Two cohorts of 2016 data were retrieved, one for multiple myeloma patients and the second for all cancer patients admitted specifically for any of three types of adverse events: anemia, thrombocytopenia, and neutropenia. For the set of multiple myeloma patients, the mean average costs was calculated across all claims; for the all cancer patients the median cost was calculated.

FIGURE 1



DISCUSSION & CONCLUSION

The results showed the cost of treating six different adverse events common to patients with multiple myeloma and to all cancer patients. The study was also able to obtain these results via patient claims for both private and public payer perspectives.

The results were limited to multiple myeloma groups; only 4 adverse event treatments could be obtained from 280 claims due to claim description issues and lack of standardized coding. Given that the adverse events captured resulted in hospitalization, the adverse events were likely severe (Grade 3 or 4).

These figures showed that thrombocytopenia and neutropenia had the same percentage of NSSF coverage from the total cost, while anemia differed. The data is not sufficient to confirm this percentage and may need further investigation to confirm these numbers. Data insufficiency might be due to the variety of treatments that patients might encounter in managing their adverse events and the lack of standard management of adverse events.

Despite these limitations, this is the first time that the cost of treating adverse events for multiple myeloma and cancer patients has been analyzed in the Lebanese market. As such, it demonstrates the feasibility and value for conducting such studies in the Lebanese market. The installation of a standard coding system between hospitals, insurance companies, and the Ministry of Public Health would improve data quality for future studies. These analyses may help in determining the total cost of treating cancer patients in Lebanon as well as the development of guidelines for cancer-related adverse events management. These guidelines would most likely be a significant asset in reducing the burden of cancer treatment cost and management.

*The rate used is 1USD=1,500 LBP

Reference:

- 1- Elias et al; Financial Burden of Cancer Drug Treatment in Lebanon, Asian Pac J Cancer Prev, 17 (7), 3173-3177
- 2- <https://www.lecommercedulevant.com/article/27537-globemed-mise-sur-la-prvention-pour-limiter-les-dpenses-de-sante>
- 3- Ammar, W; Health beyond politics, 2009.

RESULTS

TABLE 1

Group of Patients	No of Patients	Total Claims	Number of Adverse Events Found (by type)		
			Diarrhea	Febrile Neutropenia	Severe pneumonia
Multiple Myeloma Patients	26	280	1	2	1
			Neutropenia	Anemia	Thrombocytopenia
All Cancer Patients	Not Available	18	3	7	8

TABLE 2

All Cancer Patients (n=18)	Per Patient Total Cost		NSSF Portion of Median Cost
	Median (LBP)	Range (LBP)	LBP
Neutropenia (n=3)	3,587,895	0 - 11,798,250	1,406,655
Anemia (n=7)	3,766,935	597,765 - 22,763,940	898,500
Thrombocytopenia (n=8)	5,025,570	188,250 - 14,978,160	1,975,500

For the multiple myeloma cohorts, 26 patients had 280 claims (table 1). For the all cancer cohorts, 18 claims of patients with private/public insurance (co-NSSF) were retrieved for patients admitted for adverse events. Thrombocytopenia costs were highest at a median cost of 5,025,570 LBP (3,350.38 USD*) per patient. Anemia costs were 3,766,935 LBP (2511.29 USD*) per patient, and neutropenia costs were the lowest accounting for a median of 3,587,895 LBP (2,391.93 USD*) per patient. Cost ranges on all 3 events in the multiple myeloma cohort.

Figure 1 shows that thrombocytopenia and neutropenia have similar percentages of coverage by NSSF from the total cost (39.3% and 39.2%, respectively) while the anemia was lower (23.8%).

For the multiple myeloma cohort, 4 adverse events claims were found. Three claims were from the NSSF perspective: two claims for treating diarrhea one claim for febrile neutropenia, with average costs of 5,871,000LBP (~3,914 USD*) and 8,962,000LBP (~5,975USD), respectively. The remaining claim was from the private perspective. It was for the treatment of severe pneumonia with a cost of 46,419,000LBP (~30,946 USD).

From the all-cancer cohorts, the median per patient costs are shown in Table 2. The average cost for all adverse events across all cancer patients was 5,974,230LBP (3,982.82 USD*) with a range of 0 to 22,763,940 LBP (14,175.96 USD*).