

## Multiple myeloma survival pattern in pre- and post-Bortezomib eras in the United States

Mohamed Abd EL-Fattah<sup>1</sup>, Mohamed Aboelmagd<sup>2</sup>, Mohamed Talaat<sup>3</sup>

<sup>1</sup>*Department of Internal Medicine, Faculty of Medicine, Suez Canal University, Round Road, Ismailia, Egypt. mafattah3000@yahoo.com. Telephone: +20-01227597912, EL-Fattah M, Egypt*

<sup>2</sup>*Department of Endemic and Infectious diseases, Faculty of Medicine, Suez Canal University. aboelmagd\_tm@yahoo.com., Aboelmagd M, Egypt*

<sup>3</sup>*Department of Endemic and Infectious diseases, Faculty of Medicine, Suez Canal University. mohammed\_elhamouly@yahoo.com., Talaat M, Egypt*

### Aim/Background:

Bortezomib was approved by FDA for treatment of multiple myeloma (MM) patients in May 2003. This study aimed at evaluation of relative survival rates of MM patients after approval of bortezomib in the United States: 2004-2012 using the Surveillance, Epidemiology, and End Results (SEER) 18 Registries.

**Methods:** We used SEER\*Stat Program to analyze 5-year relative survival rates of 97,617 MM patients between 1973-2012 in the USA, and compare survival differences from the pre- bortezomib (1973-2002) to post- bortezomib eras (2004-2012). We compared 5-relative survival rates among groups of patients categorized by sex, ethnicity, and age groups ( $\geq 65$  and 65 years).

**Results:** The frequency of MM is higher in men than women (54% vs. 46%), approximately two third of the patients aged  $\geq 65$  years at time of diagnosis, and majority of the patients were Caucasians (Caucasians 76%, African-Americans 18%, and others 6%). Regardless bortezomib eras, 5-year relative survival rate was significantly lower in age group  $\geq 65$  years (Z-value = -46.7, p-value 0.001) than age group 65 years, 28.8 vs. 48.7%. Although the 5-year overall relative survival rate was only 37% in all MM patients, the 5- year relative survival rates increased from pre-bortezomib era 30.8% (CI: 30.3 - 31.3%) to post-bortezomib 46% (CI: 45.3 - 46.7%) and, this increase is statistically significant (Z-value =11.4, p-value 0.001). The relative survival increased from the pre-to post- bortezomib era for all ethnic groups, and age groups. Old ( $\geq 65$ ) Caucasian women had lower relative survival rates compared to young African-American women in both the pre- and bortezomib eras.

**Conclusions:** The relative survival rates of MM patients have improved in the post- bortezomib era for all ethnic groups, and age groups. Old ( $\geq 65$ ) Caucasian women had lower relative survival rates compared to young African-American women in both the pre- and bortezomib eras.