MATERIAL AND METHODS

The study viewpoint was conducted over a 12 months period from Januray -December 2023. For the purpose of the study a descriptive design had been employed. The participants included in this study were 540 women of Libyan nationality between the ages of 25-85 years.

- Sampling

A sample size of 540 Patient was estimated using a single there was samples collection from oncology centers in the study area. Sampling was used to select the study from the various ages and different to ensure representativeness the number of patients selected from oncology enter

- Patient Study

This study was conducted randomly on (540) women with breast cancer aged 25 - 85 years

- Statistical Analysis

Described the distribution of chemotherapy use by patient characteristics, including the median and inter quartile range (25th–85th percentile) for follow-up end time December 01, 2023).

We then used Cox proportional hazards regression to calculate hazard ratios (HRs) with 95% (CIs) for HF/CM associated with time-varying chemotherapy exposures. Each participant began accruing person-time on the date of chemotherapy initiation and stopped accruing person-time at the time, health plan disenrollment, death, or December 01, 2023. We used day 540 patient after diagnosis as a proxy for the index date for unexposed women. Using time-varying exposures allowed us to account for changes in chemotherapy use. For example, women were considered Adriamycin - 50 mg- based-only users until they started taxotere therapy 80 mg.

Data collection:

Data includes 540 patients diagnosed with one of the danger clinical stages of breast cancer. It collected between Januray 2023 and December 2023 from the same place (Oncology Centre) based on the psychology and physical aspects. Eight input variables will be predicted according to the clinical stages.

Age is a numerical variable between 25 and 85 years old with mean 44.1 and standard deviation 10.325. Menopausal status divided into two distinct, perimenopause 84 patients with a percentage of 64.61% and post-menopausal 46 patients with a percentage of 35.38%. Tumor size is between 1.9 and 34, the mean is 13.88 and a standard deviation of 7.605.Table 1.

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| --- | --- | --- | --- |
| Characteristics |  Gender (Female)  | Number of patients | Percentage % |
| Gender | Female | 540 | 100% |
| Tumor Size | T1 | 155 | 28.5 % |
|  | 12 | 280 | 51.5% |
|  | T3 | 56 | 10.5% |
|  | T4 | 12 | 2.5% |
|  | Tx | 37 | 6.5 % |
| Stage | I | 66 | 12% |
|  | II | 168 | 31.5% |
|  | III | 287 | 53.5% |
|  | IV | 19 | 3 % |

Table1. Distribution of patients according on tumor size and clinical stages

Moreover, the clinical stage represents the response variable to predict all data by using data mining, it divided into four stages. Stage I with 66 patients and percentage 12%, stage II with 168 patients and percentage 31.5%, stage III with 287 patients and percentage 53.5% and stage IV with 19 patients with percentage 3 %. Figure -1

Figure 1. Patients' numbers categorized by tumor stage