Top Ten Cancers’ Incidence Assessment in South Sindh’s Cancer Hospital

Abstract

Background: In developing countries, more than 5 million in cancer cases annual increase has been seen and this non communicable disease is increasing due to adoption of cancer associated lifestyle choices (diet styles, physical activity reduction and use of betelnut, pan, gutka, tobacco). This study was conducted to investigate out the top ten cancers registered at Nuclear Institute of Medicine and Radiotherapy (NIMRA) Jamshoro Pakistan.

Materials and Methods: NIMRA is one of PAEC’s (Pakistan Atomic Energy Commission) healthcare facility for diagnostic, therapeutic facility for various malignancies. Total 15,854 patients were included in this study from 2008 to 2014 registered at NIMRA. From which males were 8,032 and females were 7,822 (approximately equal ratio). The mean age for males and females were 51±9 and 46±8 years respectively.

Results: The data shows that the most common tumour in males was head & neck and breast carcinoma was top malignancy in females. Carcinoma of lung was second in males whereas head and neck was on second position. The third top carcinoma in males was in ca. liver and in females at third was gynecological cancer.

Discussion: The trend of rising cancer incidence in Pakistan can be linked with socio-economic conditions of population, nutritional insufficiency, dietary changing habits, decrease in physical activities and use of betelnut, pan, tobacco.

Conclusion: The most of patients registered at NIMRA presented in very high stages so the launching of cancer detection campaign and initiating a cancer control program is vital.

Keywords: Gynecological; Cancer; Betelnut; Pan; Tobacco; Tumour; Breast carcinoma; Westernized diets; Patients; Deadly disease; Health; Radiotherapy; Pakistan; Dietary

Introduction

In developing countries, the annually increase of more than 5 million in cancer cases has been observed and it is estimated that more than 15 million new cases of cancer will be reported by 2020 every year [1]. This non communicable deadly disease become a serious threat to health in many Asian countries and needs utmost encounter [2,3]. From its intendance in 1947 to present date, Pakistan faces high increase in incidence of cancer [4]. This burden of cancer is increasing due to adoption of cancer associated lifestyle choices like changing of diets style (westernized diets), less physical activity and smoking [5].

Although the accurate statistics on occurrence of this deadly disease and outcome are necessary for the planning and evaluation of existing schema for the purposes of cancer control and for research methodology [6] but in Pakistan no extensive database available and only hospital based figures are available [7]. This study was carried out to explore out the number of top ten cancers recorded at Nuclear Institute of Medicine and Radiotherapy (NIMRA) Jamshoro Pakistan.

Materials and Methods

NIMRA Jamshoro Pakistan is one of healthcare facility has skills of diagnosis, treatment of malignant disorders and is capable to do research on these lethal diseases under sanctuary umbrella of Pakistan Atomic Energy Commission (PAEC). The objective of building the nuclear medical institutes by PAEC is to diagnose and treat the malignant ailment and to adopt & apply latest research trends for the cancer management.

For this study total 15,854 patients enrolled from 2008 to 2014 at NIMRA were included from which male patients were 8,032 (50.66%) and female patients accounted were 7,822 (49.34%) with approximately equal ratio as shown in Figure 1. The mean age at presentation for males was 51±9 and for females was a 46±8 year.

Results

The attended patients from the period of 07 years (2008 to 2014) are summarized in Tables 1 & 2 separately for each of gender and graphically represented in Figures 2 & 3. Combine data
for both sexes has been illustrated in Table 3 & Figure 4. Facts and figures show the share of ten commonest malignancies in either sex. The first most commonest tumour in males was head and neck whereas it contributes in females at second top position. In females breast carcinoma was on the top in malignancies whereas in males it was least common. Ca. lung and ca. liver hold second and third places in males and in females, ca. lung and ca. liver were on sixth and fifth place respectively. In females gynecological cancer is on third place whereas ca. oesophagus hold fourth place and in males ca. oesophagus is on eighth place.

![Figure 1: Graphical distribution of carcinomas in both sexes (male and female).](image1)

![Figure 2: Graphical representation of carcinomas in males (yearwise).](image2)
### Table 1: Top ten malignancies in males.

| Year | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | Total |
|------|------|------|------|------|------|------|------|-------|
| Head & Neck | 140 | 192 | 315 | 337 | 317 | 336 | 412 | 2049 |
| Lung | 89 | 104 | 162 | 107 | 118 | 95 | 92 | 767 |
| Liver | 54 | 62 | 124 | 102 | 65 | 83 | 72 | 562 |
| Lymphoma | 25 | 48 | 78 | 71 | 81 | 57 | 36 | 396 |
| Urinary Tract | 40 | 23 | 60 | 68 | 48 | 67 | 53 | 359 |
| Colorectal | 27 | 29 | 43 | 51 | 56 | 61 | 41 | 308 |
| Leukemia | 23 | 27 | 28 | 53 | 40 | 35 | 18 | 224 |
| Oesophagus | 16 | 28 | 33 | 42 | 37 | 37 | 26 | 219 |
| Prostate | 27 | 15 | 37 | 35 | 32 | 31 | 36 | 213 |
| Brain | 1 | 24 | 22 | 31 | 20 | 21 | 23 | 142 |

### Table 2: Top ten malignancies in females.

| Year | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | Total |
|------|------|------|------|------|------|------|------|-------|
| Breast | 260 | 265 | 293 | 265 | 259 | 288 | 319 | 1949 |
| Head & Neck | 102 | 128 | 246 | 220 | 196 | 225 | 166 | 1283 |
| Gynea | 85 | 107 | 147 | 153 | 141 | 157 | 159 | 949 |
| Oesophagus | 34 | 45 | 65 | 89 | 70 | 68 | 53 | 424 |
| Liver | 27 | 19 | 38 | 34 | 23 | 36 | 11 | 188 |
| Lung | 21 | 18 | 34 | 38 | 24 | 23 | 25 | 183 |
| Colorectal | 12 | 13 | 30 | 36 | 31 | 28 | 30 | 180 |
| Lymphoma | 18 | 15 | 38 | 27 | 35 | 17 | 24 | 174 |
| Urinary Tract | 15 | 16 | 32 | 27 | 29 | 22 | 16 | 157 |
| Leukemia | 12 | 20 | 26 | 24 | 28 | 24 | 13 | 147 |

**Figure 3:** Graphical representation of carcinomas in females (yearwise).
Table 3: Overall combined data of reported carcinomas.

| Tumour Type     | Male  | Female | Overall |
|-----------------|-------|--------|---------|
| Head & Neck     | 2049  | 1283   | 3332    |
| Breast          | 52    | 1949   | 2001    |
| Lung            | 767   | 183    | 950     |
| Gynea           | 0     | 949    | 949     |
| Liver           | 562   | 188    | 750     |
| Oesophagus      | 219   | 424    | 643     |
| Lymphoma        | 396   | 174    | 570     |
| Urinary Tract   | 359   | 157    | 516     |
| Colorectal      | 308   | 180    | 488     |
| Leukemia        | 224   | 147    | 371     |
| Brain           | 142   | 73     | 215     |
| Prostate        | 213   | 0      | 213     |

Discussion

The cancer data from one tertiary care cancer institute is presented here (figure 5) and it may possible that the numerals may differ from other institutional figures [7]. The rising tendency of cancer incidence in Pakistan can be linked with low socio-economic conditions, lack of nutrition, changes in dietary habits, decreasing physical activity and increasing trend of betelnut, pan chewing, tobacco etc. use [1]. In current study, the first most commonest tumour in males was head and neck whereas it contributes in females at second top position as also reported by Hanif et al. [7].

The researchers [8-22] revealed that the extensive use of betelnut, pan, gutka, tobacco in any form either in smoked (cigarette, bidi) or chewable form (naswar, nass) may raise the risk of cancer of head and neck specially carcinoma of oral cavity. The breast carcinoma was found most frequent females in this study and as data contributed by Bhurgri Y et al. [23-25] and WHO (World Health Organization [26]).
Conclusion

The incidence of cancer rise may be prevented by controlling dietary habits, avoiding the usage of betel nut, gutka, pan, tobacco in any form as cigarette/biddi (smoked) or naswar/nass (chewable), minimal usage of preservative food material and least amount of pesticides spraying on crops as suggested by Yasmin Bhurgri [1]. The most of reported cases at NIMRA are presented with advance stage. The reasons behind late reporting of carcinomas at tertiary care hospitals are low socioeconomic status of population, literacy etc. as reported by Zeb A [27], so it is indeed the words of the time that the campaign must be launched for detection of cancer in early stage and an effective program should be launched for early detection of the cancer & control on it.

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Figure 5: Graphical presentation of percentage carcinomas in both genders (male and female).
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