

## ORIGINAL ARTICLE

## CAUSES OF DELAY IN CANCER DIAGNOSIS

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## ABSTRACT

**OBJECTIVES :** To assess the causes of delay in cancer diagnosis in lower Sindh, Pakistan and to suggest solutions to the problem.

**STUDY DESIGN:** A Descriptive study.

**PLACE AND DURATION:** At Nuclear Institute of Medical Radiotherapy, Liaquat University of Medical and Health Sciences, Pakistan over a period of six months from May 2011 to December 2011.

**METHODOLOGY:** 100 diagnosed cases of cancer admitted to hospital for diagnosis and treatment included in the study. All patients were interviewed regarding cause of delay in cancer diagnosis and findings were recorded on a printed Performa.

**RESULTS:** The causes for delay were divided into two groups. Delay in diagnosis (9.24 months) and delay in treatment (1.9 months). Major causes of delay in diagnosis were consulting various doctors (n=85%), financial problems (n=80%), conveyance problem (n=60%) and lack of education (n=65%). Major cause of delay in treatment was that a lot of time was taken to carry out the investigations to assess the extent of the disease reach to a final diagnosis. Partly the delay occurred (n=60%) because the patients could not keep their appointments due to transport and financial problems.

**CONCLUSION:** Major causes of delay in cancer diagnosis and treatment indicate the pivotal role of primary doctor's ability to suspect, detect and refer patients with cancer to proper cancer care facility.

**KEY WORDS:** Cancer Diagnosis, Treatment, Delay, Causes.

## INTRODUCTION

Global cancer incidence has increased along with increase in population. It has increased by 20.5% in males and by 19.3% in females over a period of 8 years (2002-2010).<sup>1</sup> Its incidence and mortality is changing due to early diagnosis and early treatment.<sup>2</sup> In developed countries facilities are available for regular checkups and population screening for cancer especially for breast, colonic and cervical cancers.<sup>3</sup> In a developing country like Pakistan such facilities are not available especially to the underprivileged population of lower Sindh. Only four cancer institutes are present in urban areas. Majority of the patients reach the cancer institutes in stage III or IV when

little can be done to save the patient. Numerous factors have been reported in the literature which may contribute to the delay in cancer diagnosis. They include socioeconomic status of the patient,<sup>4</sup> doctor's role,<sup>5</sup> psychological stress,<sup>6</sup> old age and lack of education,<sup>7,8</sup> fear of pain, suffering and death.<sup>9</sup> Other studies indicate the delay in diagnosis related to the presentation by patients and also the detection by the doctors.<sup>10,11</sup> It is well established fact that a delay in diagnosis of cancer has a definite influence on the survival of patient.<sup>12</sup> There is a need to find out the factors responsible for delay in cancer diagnosis and treatment in our patients and to find a solution to the problem.

## METHODOLOGY

This study was carried out to find the factors associated with delay in cancer diagnosis in population of lower Sindh, Pakistan. A total number of 100 patients were randomly selected for this study. The study was carried out from May 2011 to December 2011. All patients were diagnosed cases of cancer and were admitted to the cancer ward of Nuclear Institute of Medical Radiotherapy, University of Medical and Health Sciences, Pakistan. All patients were interviewed and detailed information regarding the causes of delay in cancer diagnosis was recorded on a printed Performa. A prior permission was obtained from the ward in charge and

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consent was obtained from patient or attendants before interview. The authors conducted the interviews in one sitting. All patients were interviewed. Help was taken from attendants of the patients when the patient was a child or seriously ill with disseminated cancer. The questions asked included first appearance of symptoms, consulting primary health care personnel, reaching the tertiary care hospital, reaching a diagnosis and start of proper treatment. Case records of patients were also examined to check the date of admission, diagnosis and treatment. The total average time taken from first appearance of symptoms to reaching a cancer institute was added and divided by number of patients to get a total average delay in diagnosis. Similarly the time taken from reaching a diagnosis to start of specific treatment was added and divided by number of patients to calculate total delay in treatment.

## RESULTS

A total of 100 patients studied during six months show the age range from 5 years to 80 years. Youngest patient was 5 years old male child suffering from Retinoblastoma and oldest was 80 year old male suffering from carcinoma of Larynx. Maximum numbers of patients were between 41-50 years of age receiving treatment for cancer. Number of cancer patients in various age groups is presented in Table - I. Out of 100 patients, 48% were males and 52% were females. The patients suffered from various types of cancer, shown in Table - II in a descending order of frequency. Maximum numbers of patients were suffering from oral cancer (22%) followed by breast cancer (14%), Laryngopharynx (10%) and esophageal cancer (7%). All other cancers were 2-5%.

The total average delay in cancer diagnosis in our study was 9.24 months. Table III shows the frequency of different factors responsible for delay in cancer diagnosis. The most important factors were delay by primary health care personnel before reaching the cancer institute (85%) and financial problems (80%). Some of the patients (50%) disappointed with doctors resorted to spiritual healers and quacks. Majority (65%) of these patients resided in remote areas where expert medical treatment was not available. Some of the patients (80%) had financial and conveyance problems. Few patients (18%) had social problems like a female suffering from breast or gynecological disease

**TABLE - I: Age distribution of patients suffering from cancer (n=100)**

AGE GROUP (Years)	NO. OF PATIENTS	PERCENTAGE
0-10	01	01 %
11-20	03	03 %
21-30	12	12 %
31-40	20	20 %
41-50	26	26 %
51-60	20	20 %
61-70	16	16 %
70-80	02	02 %
TOTAL	100	100 %

wanted to consult a female doctor only. Our results show that it took an average time of 1.9 months to start the proper treatment on the patients. This was the time taken for carrying out various investigations on the patient to reach to a final diagnosis.

## DISCUSSION

In developed countries efforts are being made for early detection and early treatment of cancer. In most developed countries screening is available for breast cancer, cervical cancer, colonic cancer and prostate cancer.<sup>2, 3</sup> In Pakistan population screening and cancer awareness programmes are available to a limited number of urban population but are not available to the under privileged people residing in remote areas of lower Sindh. Majority of the out population belonged to these remote and rural areas. These areas lack proper hospitals and health care facilities. Majority of patients from these areas are farmers or laborers working in fields and are illiterate. Travelling to hospitals and cancer institutes requires transport facilities and finance. Majority of these patients are poor and non-affording. Moreover a lot of time was wasted in consulting various local doctors, seeking religious or homeopathic treatment by these illiterate and poor people. When the patients reached the cancer institute a further delay occurred because a lot of time was required to carry out various investigations. These investigations include X-rays, Ultrasound, Blood counts, Hormone assays, Mammography, Computerized Tomography scan, Bone scan, Magnetic Resonance Imaging, Fine needle aspiration cytology, Needle biopsy etc. For some of the investigations like Bone Scan there were so many patients on a waiting list that it took few weeks of waiting before the scan be carried out. On reaching a diagnosis the patients were referred to the

**TABLE - II: Number of patients suffering from different types of cancer (n=100)**

TYPE OF CANCER	NO. OF PATIENTS	PERCENTAGE
Oral cavity cancer	22	22 %
Breast cancer	14	14 %
Carcinoma of Laryngopharynx	10	10 %
Carcinoma of Esophagus	07	07 %
Carcinoma of Nasopharynx	05	05 %
Testicular tumors	05	04 %
Carcinoma rectum	04	04 %
Carcinoma Colon	04	04 %
Lung cancer	04	04 %
Brain Tumors	03	03 %
Skin Cancers	03	03 %
Carcinoma Prostate	03	03 %
Hepatocellular Carcinoma	03	03 %
Metastatic Carcinoma Spine	02	02 %
Retinoblastoma	02	02 %
Soft tissue Sarcoma	02	02 %
Pancreatic Cancer	02	02 %
Osteosarcoma	02	02 %
Renal Cell Carcinoma	02	02 %
Endometrial Carcinoma	01	01 %
TOTAL	100	100 %

**TABLE - III: Frequency of causes of delay in diagnosis (n=100)**

CAUSES OF DELAY IN DIAGNOSIS	NO. OF PATIENTS	PERCENTAGE
Consulting different doctors	85	85 %
Financial problems	80	80 %
Conveyance problems	65	65 %
Residing in remote areas where medical facilities are not available	65	65 %
Lack of education (Illiterate patients)	60	60 %
Seeking religious cure	50	50 %
Non-co-operative family members	38	38 %
Seeking Homeopathic treatment	25	25 %
Social problems	18	18 %

department of surgery for excision biopsy of the tumor. This was followed by Radiotherapy, chemotherapy or hormone therapy as the case may be.

Our study shows a total average delay in diagnosis of 9 months while in the literature<sup>7</sup> it has been reported 3 months which is much less than in our patients. The most common cause of delay in diagnosis in our study was patients consulting various health care professionals (85%) while another study<sup>8</sup> observed the delay of 45 % due to health care system.

Our patients had a lot of financial problem. A study carried out in Denmark<sup>4</sup> also reports that the socioeconomic characteristics of a patient directly predict a delay in cancer diagnosis. Another study<sup>9</sup> indicates psychological factors like fear of surgery, chemotherapy and radiotherapy as cause of delay in cancer diagnosis. In our study such factors were not observed. Many problems which were observed in our patients like conveyance facility, lack of education and seeking religious and homeopathic treatment have not been reported in the literature. This is due to better health care systems.

A study carried out in Nawabshah , Pakistan shows that the delay in diagnosis of breast cancer is related to poor socio-economic status, lack of access to proper health care facility and poor literacy rate.<sup>15</sup>

The factors responsible for delay in diagnosis and delay in treatment revolve round the medical professionals at both ends. These findings have also been expressed in the literature.<sup>5, 8, 13, 14</sup>

In order to solve the problem of delay in cancer diagnosis and cancer treatment we should provide cancer awareness programs and population screening programs to urban as well as rural population of Sindh. The doctors who are working in remote areas of Sindh should be educated to refer patients immediately to Cancer Institutes if clinically a cancer is suspected. There should be complete elimination of spiritual and religious healers at national and provincial levels. All patients should be provided free transport to and from NIMRA as the patients have to pay multiple visits to NIMRA for their investigations and treatment. It has been observed that NIMRA does not have enough equipment to meet the need of the large number of patients who are coming for investigation and treatment e.g. there are long waiting lists for bone scans. Provision of more equipment will reduce the time wasted

on investigations. NIMRA has two mobile breast care clinics in use for screening for breast cancer. Similar mobile clinics for screening other cancers are need of the day. Basic testing for colonic cancer (Stool for occult blood) ultra sound, X-ray and blood examination can be provided along with an expert clinician. A social welfare officer can be appointed to look into the resources of patients. He will be able to recommend financial assistance when needed.

## CONCLUSIONS

Major cause of delay in diagnosis and treatment indicates the pivotal role of doctors. Initially the patients were being treated by various doctors and quacks and later again at cancer institutes a lot of time is wasted during investigations to reach to a final diagnosis and to start the specific treatment.

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