

PROBLEMS IN EARLY DIAGNOSIS and SCREENING of CANCER in TURKEY

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Cancer, with its patient burden and fatality and the tendency of increase in its incidence, is a public health issue and problem for both the world and Turkey. While 2005 has witnessed 12 million new cases and 7.6 million cancer deaths, according to the statistical projections of the World Health Organization for 2030, our world will see 20 million new cancer cases and 12 millions of cancer-related deaths, and cancer will be the first among the deaths associated with diseases,. World Health Organization highlights 10 facts about cancer (WHO, 10 facts about cancer):

1. There are more than 100 types of cancer effecting our body.
2. In 2005, 7.6 million people died of cancer, which is 13% of the 58 million deaths worldwide.
3. More than 70% of all cancer deaths occur in low and middle income earning countries
4. Worldwide, the 5 most frequent types of cancer in males are: lung, stomach, liver, colorectal and esophagus cancers
5. Worldwide, the 5 most frequent types of cancer in females are: breast, lung, stomach, colorectal and cervical cancers
6. Tobacco use is the single, largest and preventable cause of cancer in the world
7. One fifth of all cancers worldwide are caused by a chronic infection, for example human papilloma virus (HPV) that causes cervical cancer and hepatitis B virus (HBV) that causes liver cancer
8. One third of all cancers can be cured if detected early and treated effectively
9. It is possible to help patients in need of pain relief if current knowledge about pain control and palliative care are applied

10. If one does not use tobacco, follows a healthy diet, exercises and overcomes infections that may cause cancer, one can reduce the risk of cancer by 40%.

Summarizing all these facts into one sentence:

“Cancer is a group of diseases that are preventable and curable if detected early.”

In the guidelines issued by the World Health Organization, the following recommendations on implementing which early detection (early diagnosis and screening) program for which type of cancer are mentioned;

- Cancers for which the implementation of early diagnosis and screening programs are recommended: **breast cancer and cervical cancer**

- Cancers for which the implementation of early diagnosis programs is recommended but the implementation of screening programs is not recommended: **oral cavity cancer, nasopharyngeal cancer, stomach cancer, colorectal cancer, skin melanoma, non-melanoma skin cancer, ovary cancer, bladder cancer, prostate cancer**

- Cancers for which the implementation of early diagnosis and screening programs are not recommended: **esophagus cancer, lung cancer and liver cancer**

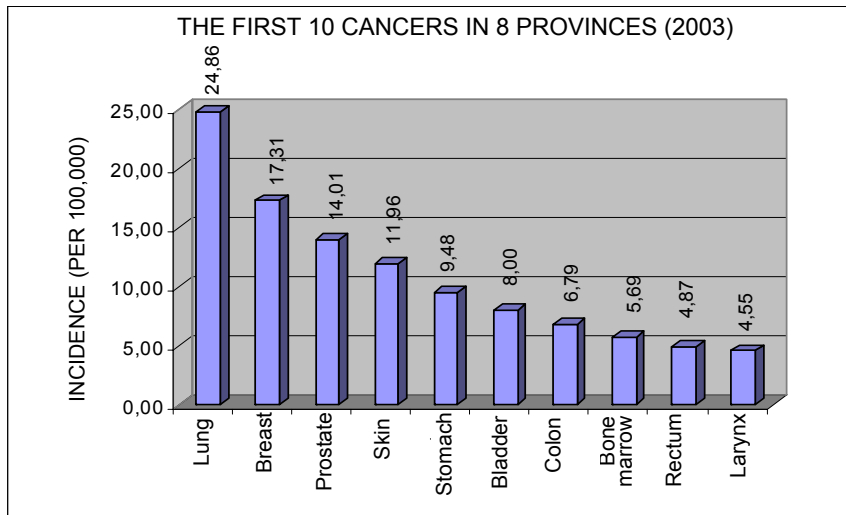
However, in the Recommendation of the European Union dated 2003 on cancer screening programs, it was noted that screening in breast cancer and cervical cancer for women and colorectal cancer in both genders has been shown to be effective and that the studies to reveal whether screening in prostate cancer is effective are still underway.

In Turkey, in line with the policies established by the Ministry of Health, screening activities, predominantly in breast and cervical cancer are carried out through Cancer Early Diagnosis and Screening Centers (KETEM) established by the Department of Cancer Control in 49 provinces, within the framework of the Reproductive Health Program of the Mother and Child Health and Family Planning Centers (AÇS-AP) and through secondary and tertiary health care polyclinic and clinic activities. However, a community based screening activity which is extensive and organized and which will include all target groups has not been achieved yet, except for a couple of pilot studies. This has various reasons of social, organizational, economic and manpower origins. Although these reasons will be mentioned, the lack of sufficient number of trained and qualified manpower, which is considered to be the main reason in the plans about future, will be dealt with principally. In the light of this fact, the breast and cervical cancer screenings are mentioned in the following lines primarily in terms of human resources planning.

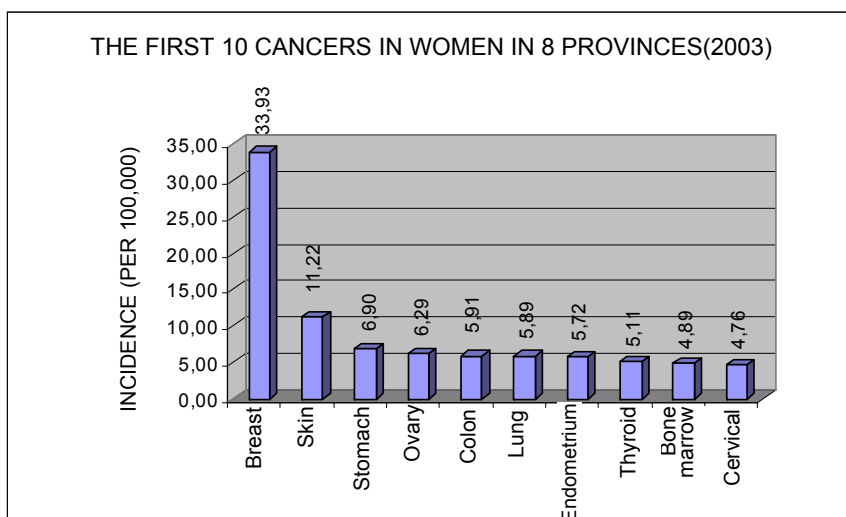
Turkey is not one of the countries where breast cancer is seen the most frequently, but the most common type of cancer seen in women in Turkey is the breast cancer. According to the data of the Ministry of Health of the Republic of Turkey for 2003, breast cancer takes the second place after lung cancer among all cancers, and holds the first place among all women cancers in the entire population. (see Graph 1 and 2). It takes also the second place after lung cancer among the cancer deaths. According to the data of the International Agency for Research on Cancer for 2002, breast cancer incidence in Turkey is 22 per hundred thousand (ASR). 6,729 new breast cancer cases and 2,970 deaths associated with breast cancer were reported the same year (GLOBOCAN 2002).

While 5-year-survival rate of the patients diagnosed with breast cancer with respect to all phases is 73% in developed countries, and is reported to be 53% in developing countries. The significant difference between these figures can be explained by ensuring early diagnosis and better treatment capabilities, owing to screening mammography. Several studies have indicated that community based breast cancer screening (clinical breast examination plus mammography), executed in an appropriate age range, at appropriate intervals, and by observing quality assurance in every step, has decreased breast cancer mortality in women by 30%.

Graph 1



Graph 2



Together with the awareness-raising trainings of “Breast Self-Examination” in Turkey, breast cancer screening activities are continuing in accordance with the “**National Standards for Breast Cancer Screening in Women**” issued by the Department of Cancer Control of the Ministry of Health on July 20, 2004, prepared by the Cancer Early Diagnosis and Screening Centers (KETEMs) established in 49 provinces.

A community based screening to be conducted within the framework of these standards can be defined in a sentence as “bilateral mammography (MLO and CC) to be carried out and to be assessed through double reading every two years following clinical examination of women aged between 50-59 years, provided that for women in the risk group and under 50 it is conducted at certain ages and at particular intervals prescribed by the physician.

The conclusions below follow this definition;

- If women aged between 50-59 years are to be screened;

The number of women is **5.082.000** (according to the projections of the Turkish Institute for Statistics-TÜİK)

When we include women aged between 40-69 years, the number in the target group suddenly escalates up to **9.535.000**.

- If mammography is to be conducted every two years, this means that roughly **2.5 million** mammography films needs to be taken per year (200.000 per month)

However, the number of mammography films taken and evaluated in the Centers for Early Diagnosis and Detection of Cancer (110.746) in 2006 and in the first three months of 2007 as well as in Breast Polyclinics in Istanbul in 2006 (48.186) is only **158.932**. Although it is obvious that it is distant from the target and far below the demand, given the

insufficiency of the radiology specialists working in state hospitals throughout the country and the intensity of their workload correspondingly, even this figure can be considered as an achievement.

The conditions are not different in cervical cancer screening. According to the data of the Ministry of Health of the Republic of Turkey for 2003, cervical cancer holds the tenth place among all women cancers and third place after ovary and endometrium cancers among gynecological cancers. According to the data of International Agency for Research on Cancer for 2002, the incidence of the cervical cancer in Turkey is 4.5 per hundred thousand (ASR), and this matches the data of the Cancer Registry Centers (see Graphic 2). 1.364 new cervical cancer cases and 726 cervical cancer deaths were reported in the same year (GLOBOCAN 2002).

Since it has a 10-15-year of preinvasive period, since there are cytological screening methods with proved efficiency and since the preinvasive lesions can be treated effectively, Invasive Cervical Cancer is considered to be a preventable disease and one of the cancer types in which the most successful outcomes are reached as regards protective approaches.

Although doubts and obscurity still exist about vaccination which was launched as the primary prevention method, discussions on this issue still continue in the world of science. No matter to which conclusion these discussions would come in the future, early diagnosis and screening will continue to be the golden standard in the control of the cervical cancer in the two decades ahead.

In accordance with the “**National Standards for Screening Cervical Cancer**” issued by the Ministry of Health, Department of Cancer Control on May 29, 2007, the framework for the community based screening program to be executed for the cervical cancer was defined as follows:

“The absolute target in the screening is to ensure all women aged 35-40 years to have their cervical smear samples collected at least once. Given Turkey’s conditions, the realizable ideal target is a community based screening to be started at the age of 35. The population to be screened should be defined by taking the household registry forms (ETF) as a basis and should be repeated at five year intervals through invitation methods to be developed. The screening of women aged 65 years whose last two (2) tests are negative should be terminated.

The figures below follow this description:

- If women aged between 35-65 years are to be screened;

The number of women is **11.337.000** (according to the projections of TÜİK). When we include women aged between 30-65 years, the number in the target group suddenly escalates to **14.575.000**.

- The total number of pathologists is **961** (as of 01.01.2007)
- If an experienced pathologist reads predominantly smear:

20-25 smear/day
1 pathologist can work 220 working days per year
 $220 \times 25 = 5500$ smear/year

- $5500 \times 961 = 5.285.500$ / year is the number of smear tests that can be read in optimum conditions.

While these are the number of cervical smears that can be read by the existing manpower, the number of smears taken and assessed by the specialists in the Centers for Early Detection and Screening of Cancer in 2006 and in the first three months of 2007 is **76831** in total. As it is in mammography, this is a number which is distant from the target and far below the demand. While this is the case, the screening centers cannot conduct community based screening programs with extensive participation and have to be contented with opportunistic screening or pilot community based screening programs for small groups. And unfortunately it does not comply with the scientific facts about the importance of early diagnosis and screening of cancer and with the experiences other than those gained in Turkey.

In parallel with the title of the article “Early Diagnosis of Cancer and Screening Problems”, the problems can be gathered with a general overview and can be enumerated as follows:

- That the significance of early diagnosis and screening in cancer is unfortunately not known by the related medical disciplines, let alone by the public or, from a harsh but more optimistic point of view, it is not attached importance as regards to its outcomes,
- With a coarse definition, the absence of an authority to organize the public, civilian and academic institutions working on this subject, to coordinate and lead their activities, to conduct cost-effectiveness analyses, to design screening activities according to the outcomes of the analyses, to provide scientific and financial assistance, to execute human resources management and to organize the training activities,
- The problems encountered during practice, in spite of the Resolution of the Board of Ministers on the Community Based Screenings of Breast and Cervical Cancers Free of Charge (numbered 25924, dated September 02, 2005)
 - That the expenses of the screening services are not included in the scope of payable social security services
 - The problems encountered in the payment of the tests prescribed by the practitioner physicians serving in the screening centers,
 - Insufficiency of qualified intermediary employee (x-ray technician, technologists ...), and
 - The main theme of the article, the fact that the number of radiologists and pathologists in the current system to evaluate mammography tests and cervical smears is not sufficient and the specialists are not oriented to meet the screening requirements of Turkey

Internationally accepted and applicable recommendations of solution that may be developed by considering the sacredness of human life and by ignoring economic and political realities for now are listed below:

- Extensive inclusion of the public health practices (prevention, protection, etc) not only into the public health internship curriculum of the schools of medicine but also into the internship courses of all relevant disciplines and under titles related with this subject, establishment of screening implementation centers like health care implementation centers or making use of existing KETEMs through protocols to be prepared.

- In accordance with the definition made in the draft Law on the Establishment of Turkish National Cancer Agency, the foundation of an institution, without delay, which is a legal entity and which has administrative and financial autonomy in order to “assist the researches on cancer in Turkey, to ensure the provision of training on cancer control in modern standards, to make effort for the establishment of cancer diagnosis and treatment standards throughout the country, to announce modern treatment methods, to follow the side effects of the cancer treatment, to review continuously the rate of increase in cancer cases in certain areas and to determine relevant measures when necessary, to prepare and present action plans and to cooperate with other Governmental Institutions on this matter, to coordinate public and private institutions serving in the field of cancer in Turkey and to collect data on cancer reliably.

- Adoption by Board of Ministers of a more comprehensive decree which supports the Resolution of the Board of Ministers on the Community Based Screenings of Breast and Cervical Cancers Free of Charge (numbered 25924, dated September 02, 2005), and which ensures that screening activities based on scientific evidence are free of charge, that the screening headline defined scientifically by all refund agencies is included in the scope of payment; and that all kinds of examination and reference documents issued by the public, private and university institutions authorized to conduct screening activities by law and regulations is included in the budget implementation plans without demanding an 's stamp.

- In general, while making human resources planning and related projections (quotas in the universities, needs of the private sector, post status and financial policies), the opinions of all related institutions must be received and thus the lack of staff in spite of vacant posts and unemployed staff in the presence of vacant posts must be avoided.

- **In conclusion, the issue that requires immediate action** is meeting, partially but meaningfully the need to evaluate the mammographies and smears taken through the trainings provided to the

medical practitioners performing cancer screening actively and working in KETEMs that currently exist in 49 provinces and will increase to 55 centers together with those to be opened at the end of 2007 and that are estimated to be established at least one in each province.

A medical practitioner who will be entitled to receive a certificate and shoulder responsibilities at the end of these training activities that will be conducted in cooperation with specialized associations and the content and quality standards of which will be established, will be able to decide the quality and normality or abnormality of the mammography and smear sample taken, but he / she will send the samples which he / she considers abnormal to the related specialist, and the work load and loss of time of the expert physician shall decrease and thus the population scope of the screening will be extended. Although Cyto-technologist staff to be composed of midwives, nurses and biologists who will receive two-year-training to work in the screening centers is another offer of solution that may be considered, this solution seems unlikely for the time being since a professional staff which will play an active role in the screening and which will be responsible only for smears can not be considered from an economic point of view.