EDITORIAL

Oral Cancer Screening and its Implementation in Pakistan

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Oral cancers are by definition, cancers of the lip, tongue and mouth.[1] Combined together with pharyngeal cancers, oral cancer is the 6th most common cancer in the world.[1] Although the incidence of oral cancer is greater in certain parts of the world, such as South and South East Asia, certain parts of France, Eastern Europe, Latin America, Caribbean and the Pacific Region, it is prevalent all over the world.[1] Oral Cancer has an annual global incidence of about 275,000. The 5 year survival rates for oral cancer remained at about 50% during the greater part of the twentieth century.[2] However, a recent improvement in the oral cancer survival rates has been observed with the 2010 reported rates being as high as 65.5%.[3] The 5 year survival rates vary according to the site and the stage at which detected. An improvement in the survival rate has been seen in the past few years in certain parts of the world, such as Canada, owing to a reduction in related risk factors, such as smoking. Poor survival rate among the oral cancer patients has been attributable to the advanced extent of the disease at the time of diagnosis. More than 60% of these cancers are diagnosed when the patient has already reached stages III or IV of the cancer.[4] Oral cancer arises in the surface oral epithelium, which is easily accessible for direct visual and tactile examination. It is known, through evidence that survival rates of oral cancer vary according to the stage of cancer at the time of diagnosis. A randomised controlled trial study reported that 5 year survival rates for oral cancer diagnosed at stage I is 66.2%, while that for a cancer diagnosed at stage IV is 22.2%.[2] Early diagnosis of oral cancer increases the survival rate, improving the quality of life along with that. Also, the cost of treating an oral cancer patient at stage IV is three times that of treating one at stage I.[5] Hence, early diagnosis of oral cancer is cost efficient as well. Although all the above mentioned facts apparently suggest that screening for oral cancer should be carried out, there are certain factors that must be considered before any screening programme can be implemented. First of all, it must be ensured that the screening for the disease in question is suggested on sound scientific evidence. In the case of oral cancer, the need for screening and the importance of early detection of disease has been shown through the earlier mentioned argument.

Then, before any screening programme is put into practice, it must be ensured that the benefit of the specific programme clearly outweighs the harm, for example, if the disease is diagnosed earlier on during its clinical course, does an effective intervention exist that would improve the disease prognosis? Is the intervention available acceptable to the public and is it economically feasible? If any of these problems are realised once the programme is fully functional, efforts to modify the programme or to stop it all together might be faced by severe criticism and opposition from the general public and the media.[6] Any screening program fulfilling its criteria automatically caters for any associated problems.[7] The main aim of screening is to detect the disease and its predictors.[8]

Principles of Screening as applied to Oral Cancer

When oral cancer screening is evaluated in the light of the principles of screening, it is observed that all the criteria are not fulfilled.[7] The natural history of oral cancer is not yet fully known and understood. The economic feasibility of an oral cancer screening program has yet not been established.

Choosing the right Implementation Strategy for Oral Cancer Screening

The next question that needs to be addressed is whether the whole population should be targeted or would a high-risk population targeted approach be better? A randomised controlled trial, carried out in India concluded that the most cost-effective way of carrying out oral cancer screening is by visual inspection offered to high-risk population only.[5] In order to implement a programme for a high-risk population, we have to determine how to define one. As there are no set criteria for a high-risk population for oral cancer, we must evaluate the evidence available with regards to this. Older people (people aged 40 years and above) are at a higher risk of developing oral cancer, as compared to younger people. Incidence at 40 years of age is 10-20 times

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that at age 20.[9] Also, the number of screening examinations required to detect a case would be reduced by only screening older people. However, employing such a strategy would mean that younger people developing oral cancer would not be detected.[11]Individuals that smoke and consume alcohol are at a 30 times greater risk of developing oral cancer than those who do not. Also, 75% of oral cancer patients have these habits.[10] However, by targeting people who smoke and drink, 25% of those people who are not involved with any of these habits would be left out. If a high-risk approach to screen older individuals who smoke and/or consume alcohol is used, then the costs saved can be used to carry out screening more frequently in the high-risk population, increasing the potential to detect oral cancer.[11]

Epidemiology of Oral Cancer in Pakistan

In order to implement a screening programme in Pakistan, there are certain facts that must be considered first. Pakistan is situated in South Asia – the region where some countries with the greatest incidence rates are situated. Some recent reports have placed Sri Lanka and Pakistan as having the greatest incidence rates of oral cancer in the world.[1]Recent reports suggest that Karachi has the highest incidence rate of oral cancer in the world.[1]As compared to Karachi, the incidence of oral cancer is quite low in the rest of the country. Therefore, an oral cancer screening programme targeting the city of Karachi would be more appropriate than one for the whole country. Due to the religious culture of the country; alcohol consumption is low all over Pakistan. However, other risk factors for oral cancer are in common practice. Amongst these are included cigarette smoking, betel quid (pan) chewing, sheesha and bidis. Pan chewing is especially very common in Karachi and is a considered to be a common lifestyle choice, rather than an addiction.

Oral Cancer Screening Implementation in Pakistan

Karachi is the largest city in Pakistan with a population of over 20 million. It is divided into 5 divisions. Fortunately, each division has tertiary care hospitals and the health infrastructure is well developed across the city. As Pakistan has a low health budget, a substantial amount of finances may not be allocated for such a program. Hence, instead of a whole population approach, a high-risk population strategy needs to be employed. People of 40 years of age or above, who smoke, eat Pan, chew any form of tobacco or use all of the afore-mentioned substances, should be included in the programme. Approaching a population such as that described above would be a cumbersome process. It has been reported that oral cancer screening, if carried out by dentists is more cost-efficient, than if done by medical doctors. Hence, the screening test can be performed by dentists on routine dental check-ups. The problem lies in approaching those individuals, who do not come for regular check-ups with the dentist, as the majority of the people of Karachi are from this group. To solve this problem, screening sites need to be setup in areas other than the major hospitals and dental clinics which would be more accessible to the general population, such as the hundreds of basic health units (BHUs) all over the district. At these BHUs, the training of paramedical staff and dental auxiliaries has multiple advantages. Firstly, this will serve that part of the high-risk population that do not visit the dentists. Secondly, this strategy will in turn be more cost and time effective. Various screening methods have been identified in the literature, including oral examination, toluidine blue, brush cytology, tissue reflectance and autofluorscence.[5]As visual oral examination is the most cost-effective screening test for oral cancer, this method should be employed for screening.[11] Individuals testing positive with oral lesions persisting for three weeks after the removal of any potential irritant, she should be referred for a biopsy to the nearest health care facility. If the biopsy is negative, the person should be kept under monitoring during her regular dental visits, during which the screening should be repeated. If the biopsy shows dysplasia, the person should be referred to a hospital to be seen by an oncologist for risk assessment and treatment.[9]For a successful screening programme to be placed into practice, an appropriate team needs to be put together, in which the management is involved in the project as much as the workers.[6]One central and five divisional committees should be made, with a central manager and five divisional managers. Committee meetings should be held on a regular basis. Programme progress should be evaluated; any problems faced by the teams should be discussed, with efforts to come up with practical solutions.

Conclusion

Complying with all the above mentioned principles means that a screening programme should achieve its desired results, at any cost. To implement a successful screening program in a city such as Karachi, with an alarming incidence rate for oral cancer, a multi-sectoral approach needs to be adopted. A clearly defined government policy needs to be designed, implemented and monitored.

Screening sites need to be setup in the hundreds of basic health units all over the district. The selection of participants should be determined on the basis of the history of oral cancer risk factors, including the smoking, pan and alcohol. The dental auxiliaries and paramedical staff should be trained and calibrated to perform screening procedures, in order to optimise time and financial resources. There should be an established protocol for following up with participants with positive screening results.

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