Students' Corner
Short Communication

The challenge of head & neck squamous cell carcinoma control in Pakistan

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Despite rapid improvement in technologies, surgical innovations and multi-disciplinary treatment strategies, the outcome for HNSCC (Head & Neck Squamous Cell Carcinoma) patients has not significantly improved in the past four decades.[1] This is particularly disconcerting for South-Asian countries such as Pakistan, where HNSCC appears to be one of the most common cancers overall in the population. Head and neck cancers account for approximately one-fifth of all cancers in males and about one-tenth in females.[2] This data, in the absence of any comprehensive national cancer resource, is largely based on experience from institution-based cancer registries.

As the grave consequences of this rapidly evolving epidemic are becoming clear, it is important to investigate mechanisms that can be used to control this disease. This will require a deeper analysis of the risk factors, of the population at risk and of the treatment resources that are available. Unfortunately, as is the case with most of the developing world, in the face of major infectious diseases such as Malaria and HIV, malignancies have traditionally occupied a low priority on healthcare agenda.[3] As a result, in a country such as Pakistan, a cancer diagnosis remains one that invariably carries significant morbidity or certain mortality. In addition, this is usually accompanied with severe stigmatization by society. In the case of HNSCC, a diagnosis often occurs at an exceedingly young age and at a greatly advanced stage. Cancer could be potentially debilitating for some of the world's poorest, as global cancer mortality is expected to outnumber HIV, TB, and Malaria combined, with 70% of these deaths occurring in the developing world.[4]

The single most important prognostic factor, that is central to the biology of HNSCC, is cervical lymph node metastasis and its presence can drastically alter the outcome of the disease, regardless of type and location of the primary tumour. This loco-regional spread also dictates subsequent therapy and greatly escalates the costs that will be incurred by the patient for any intervention. Unfortunately, as our experience suggests, cases in Pakistan, particularly oral cavity cancers, are seldom caught before reaching this stage. This contributes to a major portion of the disease burden and addressing it could have a great impact in ameliorating some the disease's effects.

The most effective way with which this can be achieved is through targeted screening of high-risk population groups. However, it is essential that this is accomplished in low-resource settings that can have practical applicability in the developing world. This has already been demonstrated through a cluster-randomized control trial in India. It utilized visual inspection to achieve significantly reduced mortality in the intervention group through early detection of malignant and pre-malignant lesions in high risk population groups.[5] Subsequent analyses also revealed significant economic benefits in terms of incremental cost per life-year saved.[6] Other possible adjunctive methods include utilizing toluidine blue, fluorescence imaging and brush biopsies that may improve diagnostic sensitivity and specificity. Such screening programmes can be utilized in a cost-effective manner and at a large scale by governments through healthcare workers with minimal training and medical expertise. However, further research is needed that adequately addresses the impact on quality of life, possible harms of screening from false positive or false negative findings, psychological implications and strains on existing healthcare infrastructure before policy recommendations can be advocated.[7]

The second factor that needs to be addressed is of diagnostic delay that is peculiar to HNSCC in developing countries. A vast majority of patients present with advanced-stage disease and both patient and provider related delay contributes towards the late diagnosis.[8] The silent nature of oral lesions, misinterpretation of symptoms and lack of awareness about risk factors and symptoms related to HNSCC contribute to the high prevalence of patient related delay. Provider related delay stems from the lack of trained oncologists and associated treatment facilities. In addition, many patients especially from rural setups seek help from spiritual healers first in order to get a quick remedy. Others even after presentation are fearful of biopsies and are hesitant to accept the diagnosis. These factors need to be taken into consideration before any large-scale control programme can be initiated.

Thirdly, cancer intelligence units, in the form of national cancer registries could have a pivotal role in the long-term control of HNSCC. These units can allow systematic collection of locally relevant data on cancer incidence, evaluate changes in these patterns over time and assess the effect of any interventions associated with a cancer control programme.[9] In the absence of such resources, it is not

possible to develop a framework for evidence-based research that can influence future policy. They may also be able to provide substantial, unequivocal evidence that will underscore the importance of HNSCC and of other malignancies in general as a significant health burden. This will be needed to create sufficient political priority so that efficient referral systems, increased awareness amongst healthcare workers, improved diagnostic and treatment modalities and higher donor funding can be generated.

Finally, the importance of primary prevention needs to be emphasized. Limiting the use of various forms of smokeless tobacco, areca nut, betel leaf, etc is perhaps the most appropriate place to begin with. However, as experience with tobacco control suggests, it is very difficult to change existing social attitudes, practices and perceptions.[10] The current mushrooming of the various forms of electronic and print media being experienced by the country on the other hand, presents itself as a wonderful opportunity for health promotionists to propagate the necessary messages to the public. Appropriate grass roots level programmes aimed at the community, including schools based interventions could greatly alter the future burden of the disease.

At present, a wide variation exists globally in cancer survival between different regions of the world and this discrepancy is accentuated when rural setups in South-Asia are brought into consideration. Fortunately, effective and low-cost solutions are on the horizon and the time is now ripe to investigate and implement them further. HNSCC is Pakistan's next great health challenge. There is an urgent need to improve awareness about the disease and to introduce population-based cancer registration and early detection programmes. In addition, health-services infrastructure and human resources need to be mobilized to help combat this disease.

References

1. Carvalho AL, Singh B, Spiro RH, Kowalski LP, Shah JP. Cancer of the oral cavity: a comparison between institutions in a developing and a developed nation. Head Neck 2004; 26: 31-8.
2. Bhurgri Y, Bhurgri A, Usman A, Pervez S, Kayani N, Bashir I, et al. Epidemiological review of head and neck cancers in Karachi. Asian Pac J Cancer Prev 2006; 7: 195-200.
3. Lingwood RJ, Boyle P, Milburn A, Ngoma T, Arbuthnott J, McCaffrey R, et al. The challenge of cancer control in Africa. Nat Rev Cancer 2008; 8: 398-403.
4. Murray CJL, Lopez AD, eds. The Global Burden of Disease, Volume 1. A comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020. Cambridge MA: Harvard University Press on behalf of the World Health Organization and the World Bank; 1996.
5. Sankaranarayanan R, Ramadas K, Thomas G, Muwonge R, Thara S, Mathew B, et al. Effect of screening on oral cancer mortality in Kerala, India: a cluster-randomised controlled trial. Lancet 2005; 365: 1927-33.
6. Subramanian S, Sankaranarayanan R, Bapat B, Somanathan T, Thomas G, Mathew B, et al. Cost-effectiveness of oral cancer screening: results from a cluster randomized controlled trial in India. Bull World Health Organ 2009; 87: 200-6.
7. Kujan O, Glenny AM, Oliver RJ, Thakker N, Sloan P. Screening programmes for the early detection and prevention of oral cancer. Cochrane Database Syst Rev 2006; 3: CD004150.
8. Carvalho AL, Pintos J, Schlecht NF, Oliveira BV, Fava AS, Curado MP, et al. Predictive factors for diagnosis of advanced-stage squamous cell carcinoma of the head and neck. Arch Otolaryngol Head Neck Surg 2002; 128: 313-8.
9. Rastogi T, Hildesheim A, Sinha R. Opportunities for cancer epidemiology in developing countries. Nat Rev Cancer 2004; 4: 909-17.
10. Maher R, Devji S. Prevalence of Smoking among Karachi Population J Pak Med Assoc 2002; 52: 250-2.