

Authors:

Dr Mohd. Aminuddin Mohd. Yusof

Expert Committee:

Dr Abdul Majid Md. Nasir
Dr Azura Deniel
Dr Mohd. Rafie Mohd. Kaslan
Dr Nor Saleha Ibrahim Tamin
Dr Pua Kin Choo
Assoc Prof Dr Rahmat Omar
Datin Dr Rugayah Bakri
Dr Teo Soo Hwang

External Reviewer:

Professor Dr Din Suhaimi Sidek
Dr Norizzati Bukhary Ismail
Bukhary
Dr Salmah Idris
Dr Yap Yoke Yeow
Dr Zulkiflee Salahuddin

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Health Technology Assessment
Section (MaHTAS)
Medical Development Division
Ministry of Health Malaysia
Level 4, Block E1, Precinct 1
Government Office Complex
62590 Putrajaya.

Tel: 603 8883 1246

Fax: 603 8883 1230

Available at the following website:
<http://www.moh.gov.my>

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Background

Although cancer is a leading cause of death worldwide and projected to rise, more than 30% of the deaths are believed to be preventable. This can be done through early detection of the disease by having education and screening programme.

Nasopharyngeal Carcinoma (NPC) is more common in certain regions of Asia and Africa than elsewhere in the world in which certain factors are thought to predispose to its occurrence. Despite improvements in radiotherapy techniques and better treatment outcomes with combination of chemotherapy and radiotherapy, only less than 10% of NPC unscreened patients presented with early stage of the disease.

With the significant burden of disease of NPC in Malaysia and possible significant role of screening of the malignant condition, one of the strategies for screening and early detection in National Cancer Control Blueprint 2008-2010 is to provide NPC screening service.

Technical Features

NPC is a cancer arising from the epithelial cells that cover the surface and line the nasopharynx. Screening methods for the disease includes Epstein-Barr virus EBV serology and nasopharyngoscopy. EBV is a member of the herpes virus family. Lifelong dormant EBV infection in the immune system is associated with the occurrence of NPC. EBV antibodies include antibodies against Viral Capsid Antigen, Nuclear Antigen and Early D Antigen.

Policy Question

- Should nasopharyngeal carcinoma screening programme be introduced as part of the National Cancer Control Programme?
- What is the best screening test for nasopharyngeal carcinoma screening programme?

Objective

To assess the effectiveness and cost-effectiveness of NPC screening programme and to assess the diagnostic accuracy of the screening tests used in the NPC screening programme

Methods

Electronic scientific databases were searched for published literatures on NPC screening. They included Pubmed/Medline, Cochrane, Ovid, INAHTA, Proquest and Scopus websites. The reference lists of all retrieved literatures were searched to identify other relevant literatures. General search engine was also used to search for additional literatures. Experts in the field were also contacted to identify further literatures. There was no limitation applied in the search which ended on the 22 December 2009. All relevant studies were retrieved and appraised by one reviewer using Critical Appraisal Skills Programme (CASP) and graded according to level of evidence of US/Canadian Preventive Services Task Force.

Result and conclusion

There is no evidence on the effectiveness of NPC Screening in terms of reduction in mortality rate or increase in quality adjusted life years (QALY). Risks to have NPC are EBV infection and family history of NPC. However, the number of affected family members for risk of NPC is inconclusive. On the other hand, there is fair evidence to demonstrate acceptable diagnostic accuracy of the EBV serological test in a NPC screening programme.

Recommendation

Based on the above review, there was insufficient evidence to recommend a population-based NPC screening programme as a public health policy. EBV infection is a risk to NPC in individuals with a family history of the disease. In view of the acceptable diagnostic accuracy that it has, the EBV serology test is a promising tool for selective screening in those with a family history of NPC. However, standard guidelines should be developed in its application including follow up of those who are seropositive to EBV infection. Interpretation of such tests is complex and trained physician in EBV testing is necessary.

Evidence of high and good quality assessing the effect of such population-based screening, in terms of the reduction in mortality of NPC in the screened population, the risk-benefit ratio and cost-effectiveness is warranted to recommend a NPC Screening Programme.