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Cancer Patterns in Selected Asian Populations

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INTRODUCTION

Asia is a huge continent with diverse peoples and cultures, accounting for almost 60% of the world's population. Any attempt to describe the cancer patterns in such a situation would result in an oversimplified picture. As such, I will confine my remarks to major characteristics of selected cancers in four of the main racial groups in Asia—the Chinese, Malays, Indians and Japanese (Fig 1).

ASIA



Fig 1

For the sake of comparability, the data presented are based on 'Cancer Incidence in Five Continents' (Volume IV)¹. I will highlight interesting differences between groups and where possible, even differences between 'resident' populations and 'migrant' populations of similar races. Japanese data are from Miyagi, Osaka, Fukuoka and Nagasaki. Information on Indians are from Bombay, Poona and Singapore. Chinese populations are represented by Shanghai, Hong Kong and Singapore. The only source of data on Malays is the Singapore registry.

In making some of the international comparisons, it is not easy to disentangle the interactions between environmental and genetic factors. Any variation between groups can only suggest certain possibilities and one must go on to analytical studies to refute or confirm aetiological hypotheses.

Many of the main racial groups are further sub-divided into sub-groups with distinct socio-cultural characteristics. Therefore, the racial groupings are at best crude but generally acceptable mainly for the purposes of hypothesis generation. In addition, data for large countries such as India and China are also subject to regional variations, where in some instances particular cancers are associated with specific factors.

RESULTS

The results will be presented according to selected sites. In each case, the world-wide range of age-standardized incidence rates will be given (the main bars), and the relative posi-

tions of the chosen Asian populations shown within the bars.

LUNG CANCER (Fig 2)

This is a cancer mainly of the West. Internationally, the Chinese males are in the middle of the range, followed way down by Japanese, Malays and Indians. Most of these cases are associated with cigarette smoking and the situation is likely to worsen as more people smoke, especially the high tar and nicotine cigarettes that are being actively promoted in the developing world. In females, the rank order is about the same although the gap between the Chinese and the rest is even wider. The relatively high incidence in Chinese females (50% of which are adenocarcinomas) cannot be explained by tobacco consumption alone, and remains a subject of great epidemiological interest². There are minimal differences between groups based on migrant status. With few exceptions, the global trend is on the increase and it is expected to surpass the incidence of stomach cancer in the near future³. This trend is more evident in the urban centres, including those in Asia.

LUNG CANCER
(ICD=162)

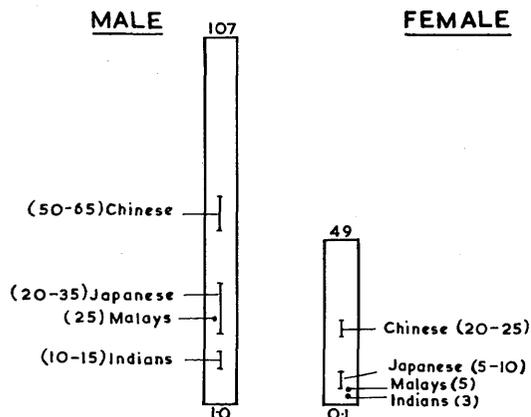


Fig 2

NASOPHARYNX CANCER (Fig 3)

It is generally a rare cancer site all over the world, except for Chinese populations, especially those from southern China. Hong Kong has

the world's highest recorded incidence in both sexes. Further north, in Shanghai, the rates are about one-sixth of Hong Kong's. Malays are known to be in the intermediate range, so also the Kadazans and Dayaks in Borneo. There is a definite genetic susceptibility factor in Cantonese Chinese (e.g. the HLA-A2 BW 46 haplotype)⁴. On the other hand, the environmental triggers, either one or more, remain unresolved. The present leads include EBV infection and consumption of Cantonese salted fish⁵.

NASOPHARYNX CANCER
(ICD=147)

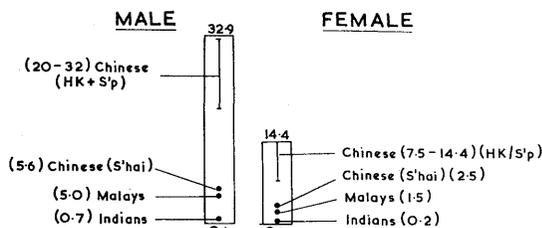


Fig 3

ORAL CANCER (Fig 4)

This is without doubt the cancer of Indians. Most other populations report very low incidence. This is mainly attributed to the chewing of areca nut, betel leaves, lime paste and tobacco in varying combinations. The present consensus is that tobacco is the chief culprit, promoted by diets that are deficient in vitamins A and C⁶. In certain communities in east India, this cancer is associated with the unusual habit of "reverse smoking" (having the burning end inside the mouth).

ORAL CANCER
(ICD:143-5)

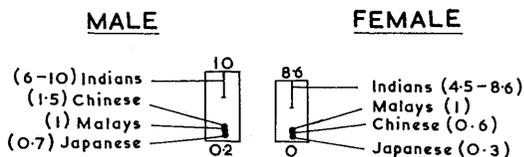


Fig 4

OESOPHAGEAL CANCER (Fig 5)

On the average, the incidence of oesophageal cancer is about one-half that of stomach cancer in Chinese and the differential is even greater in Japanese (one-tenth). Among the populations studied, the Chinese have the highest incidence, especially among males, followed by Indians and Japanese. In females, the positions are jumbled, mainly because of small numbers. All over the world, it is a fast declining cancer, even though the aetiological factors are not definitively confirmed. The main leads are alcohol, tobacco, nutrient deficiencies and dietary carcinogens (e.g. aflatoxin and nitrosamines)⁷.

OESOPHAGEAL CANCER
(ICD: 150)

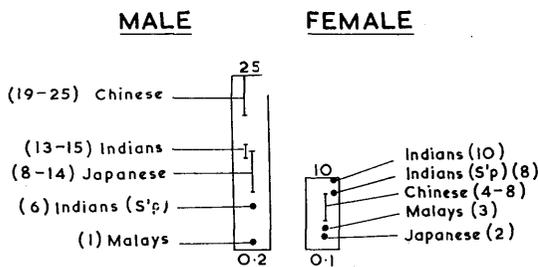


Fig 5

STOMACH CANCER (Fig 6)

This is a cancer of the Japanese, followed by the Chinese. On a global scale, it is the most frequent cancer. However, the incidence is also declining, although the reasons are not well defined⁸. Environmental factors are likely to play a major role as demonstrated by the lower incidence in US-born (Nisei) Japanese as compared to Japanese in Japan. Intake of salted foods is one important factor, but this is not likely to be the full story. The likely protective effects of green-yellow vegetables, soybean products, beta-carotene, vitamins A and C require further attention⁹.

COLON CANCER (Fig 7)

It is generally accepted that large bowel cancer is more prevalent in the Western developed

STOMACH CANCER

(ICD: 151)

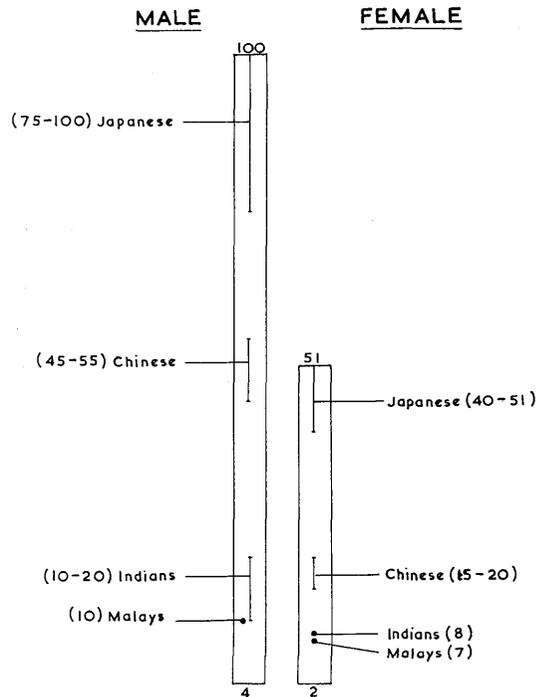


Fig 6

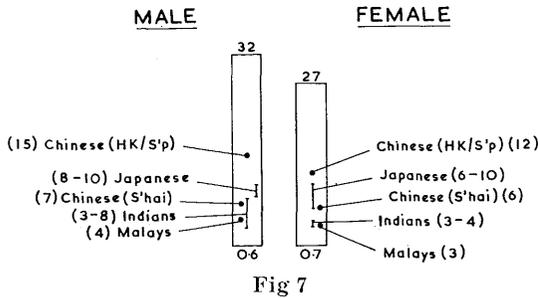
countries. Asian communities have low incidence, although the urbanized centres like Singapore and Hong Kong are beginning to show increases. The rates among Chinese in China (Shanghai), Japanese, Indians and Malays are low¹⁰. The main factors implicated are excessive dietary fat and animal protein, and deficiencies in dietary fibre, and possibly micronutrients¹¹. With increasing affluence in many Asian urban centres and the concomitant dietary changes, this cancer may well increase.

RECTAL CANCER (Fig 8)

In both sexes, the rectal cancer incidence rates in Asian populations are quite similar to those for colon cancer. The relative positions are also maintained, with the Hong Kong and Singapore Chinese at the top. Recent literature suggests that there may be different risk factors for different sub-sites of the large bowel¹². More definitive information in this aspect would be required.

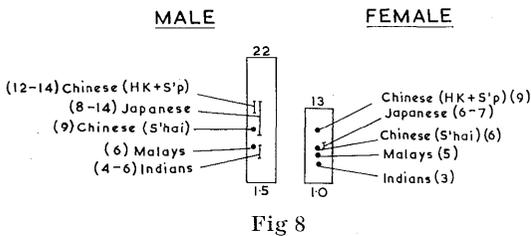
COLON CANCER

(ICD: 153)



RECTAL CANCER

(ICD: 154)

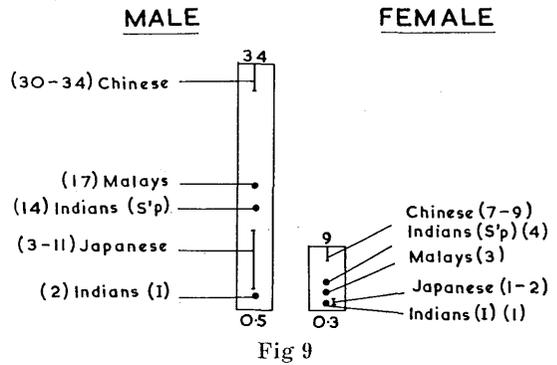


LIVER CANCER (Fig 9)

This is a cancer of the Chinese and Tropical Africans. In fact, it has been estimated that the Chinese are responsible for 40% of the world's cases. The incidence, especially among males, in Singapore Malays and Indians is also relatively high. The incidence is low in Japanese (except Nagasaki) and among Indians in India. While accepting that some cases of liver secondaries were wrongly classified here, the bulk pertain to primary hepatocellular carcinoma. Hepatitis B virus seems to be the main factor implicated, possibly up to 80% of cases¹³. But there is also interest in the contributory and interactive roles of aflatoxin, alcohol and cigarette smoking¹⁴. It remains to be seen whether reduction of Hepatitis B infection and carrier rates will eventually result in a decreased incidence of primary hepatocellular carcinoma.

LIVER CANCER

(ICD: 155)



FEMALE CANCERS (Fig 10)

While the incidence of breast cancer is generally low in Asia, that of cervical cancer is much higher. Chinese have the highest rates for breast, although the incidence level is about a quarter of the Western developed world. Information is still sketchy on the extent known and suspected risk factors are operating in Asian populations¹⁵. On the other hand, cervical cancer is better understood. As expected, Indians and Chinese have high incidence because of early marriage (early sexual exposure), high parity and poor personal hygiene¹⁶. More studies are needed in Asia to implicate any biological agents such as Human Papilloma Virus (HPV). Malays, the majority of whom are Muslims, have relatively lower incidence, although the rates are not as low as for the Jews.

CONCLUSION

This brief overview has highlighted some of the important cancers in Asia, putting into perspective their relative frequencies in the global context. For some primary sites, cancer incidence is high in our part of the world, and may even be top in rank order. Thus, there is much that researchers working on local problems can contribute to the understanding of aetiology, leading eventually to the control of the relevant cancers in Asia and the rest of the

FEMALE CANCERS

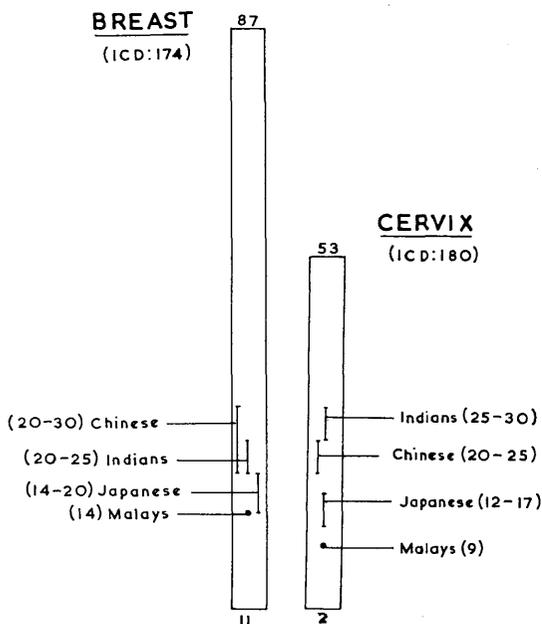


Fig 10

world.

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