

Chapter II

2

ORAL CAVITY

ICD-10 C00-C08

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**Incidence**

Compared with other parts of the world, Thailand is among the low incidence countries for oral cavity cancer. The estimated incidence rate of oral cavity in Thailand is 5.2 and 4.6 per 100 000 population in males and females respectively. The highest incidence of the cancers is observed in the Southern region (Songkhla) in males and in the Northeastern part of the country, especially in Khon Kaen in females (Figure 2.2.1). It is also obvious that the rate of oral cancer in the northeastern region and Lampang is higher in females than males while it reverses in other registries. Beginning to appear at the age of 20 years, the age-specific incidence rates of the cancer rapidly rise with age (Figure 2.2.2).

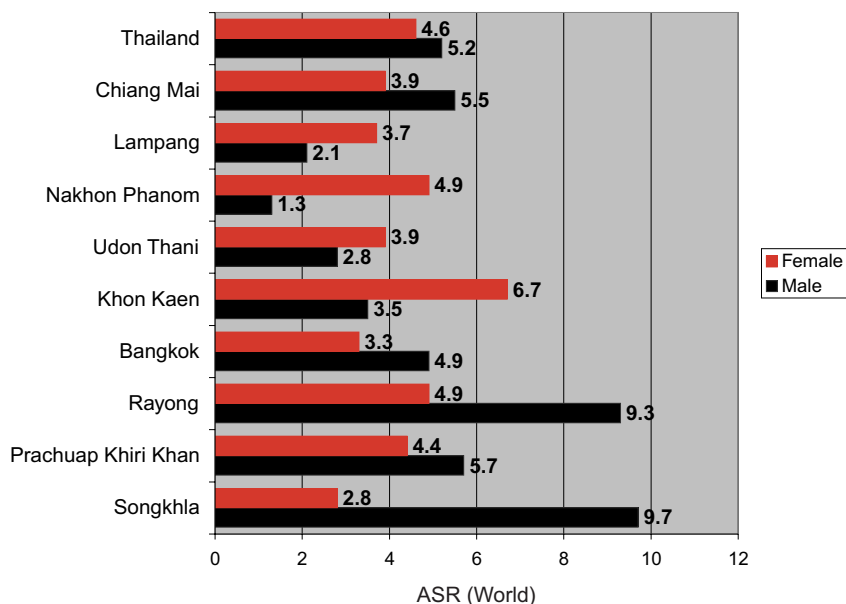
Such a relation of the cancer to coastal region has just been observed since the registries of Rayong and Prachuap Khiri Khan started their operation later than the others and not included in the previous volumes of Cancer in Thailand. Investigation should be made

whether the phenomenon is related to environment or genetics of the population.

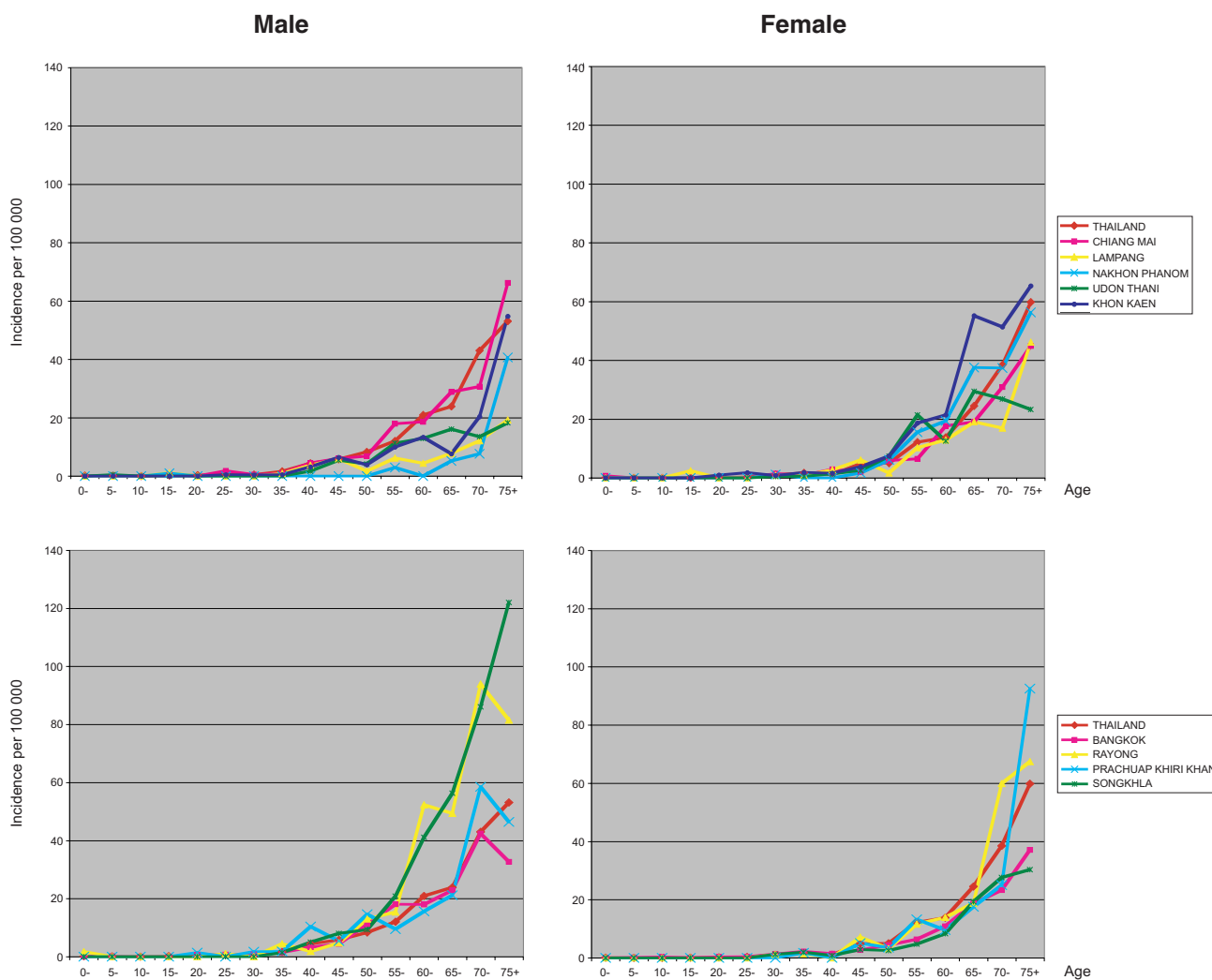
**Risk Factors**

Tobacco smoking and alcohol have been identified as the two major causes of oral cavity cancer in Western countries (Tomatis *et al.*, 1990). In the Indian subcontinent, chewing of betel quid (which contains betel nut, tobacco, lime and other constituents) has been shown to be an important cause of oral cancer (IARC, 1985). A case-control study by Prateepko (1998) demonstrated the relative risk (RR) of tobacco smoking and alcohol consumption of 4.0 and 3.8 respectively. Betel quid chewing is common in certain parts of Thailand, particularly in the northeastern and north, where it is relatively common in female villagers. In a case-control study in Chiang Mai, Simarak *et al.* (1977) found that betel chewing was a significant risk factor for oral cavity cancer in men (RR = 2.3) and women (RR = 3.2) while Prateepko's study in southern

**Figure 2.2.1** Oral cavity cancer in different regions, 1998-2000



**Figure 2.2.2** Age-specific incidence rates of oral cavity cancer, 1998-2000



Thailand also found a similar result with RR of 12.5. A recent population-based case-control study (Hirunwatthanakul *et al.*, 2006) in Na Mom, Songkhla demonstrated a relationship of radium contaminated well water consumption and cancer of the upper digestive tract including oral cavity. This finding may explain the exceptionally high incidence of oral cancer in the southern part of the country where uranium and its daughter el-

ement, radium, are common in the underground granite rock. However, the evidence has to be confirmed by other studies and the reason behind the high incidence rate of the cancer on the eastern part of the country should also be investigated.

A number of molecular studies have been done on oral cancer cases. Betel quid chewing and tobacco smoking habit (Kerdpon *et al.*, 2001) showed a trend of de-

creasing risk of p53 expression with lifetime exposure (OR = 0.62 and 0.50 respectively). There were also other studies on p53 mutation and risk factors of oral cancer (Thongsuksai *et al.*, 2001; Thongsuksai *et al.*, 2003), however, the evidences were not conclusive. Studies have been done on a group of genes involving in metabolizing enzymes and DNA repair (Kietthubthew *et al.*, 2001; Kietthubthew *et al.*, 2003; Kietthubthew *et al.*, 2005).