

Chapter II

13

BREAST
ICD-10 C50

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Incidence

Breast cancer is the most common cancer in female worldwide, with 1 151 298 new cases identified throughout the world each year and age-standardized incidence rate is 37.4 per 1000,000 women. The highest-age standardized incidence rates is 101.0 per 100 000 women in USA and the lowest-age standardized incidence rate is 3.9 per 100 000 women in Mozambique.

Breast cancer is the second most common cancer in Thai women. The estimated incidence rate is 20.5 per 100 000 women and 0.2 per 100 000 men (Figure 2.13.1). The incidence is increasing in the past decade. The highest incidence rate of female breast cancer is in Bangkok (ASR = 24.3) and male breast cancer is in Songkhla (ASR = 0.4). The lowest incidence is in Nakhon Phanom (ASR = 10.1) and male breast cancer is in Lampang and Rayong (ASR = 0).

The age-specific incidence rates begin to rise at about 35 year

and reach a maximum in 45 year, followed by a decline and a plateau (Figure 2.13.2). The most common histologic type is duct carcinoma in all registries (Figure 2.13.2).

The most common histological subgroup of breast cancer is ductal carcinoma (Figure 2.13.3), which is found 76.4%-91.2% of cases, followed by other (8.6%-19.2%) and lobular carcinoma (0-6.4%). Stage distribution is shown in Figure 2.13.4.

Risk factors

There are marked variations in breast cancer rates among population and over time. Known and suspected risk factors involved in the development of breast cancer are reviewed and considered in relation to etiologic mechanisms leading to breast cancer.

The incidence of breast cancer varies markedly from country to country, being highest in United States and Northern Europe and lowest in Asia.

Reproductive factors have re-

Figure 2.13.1 Breast cancer in different regions, 1998-2000

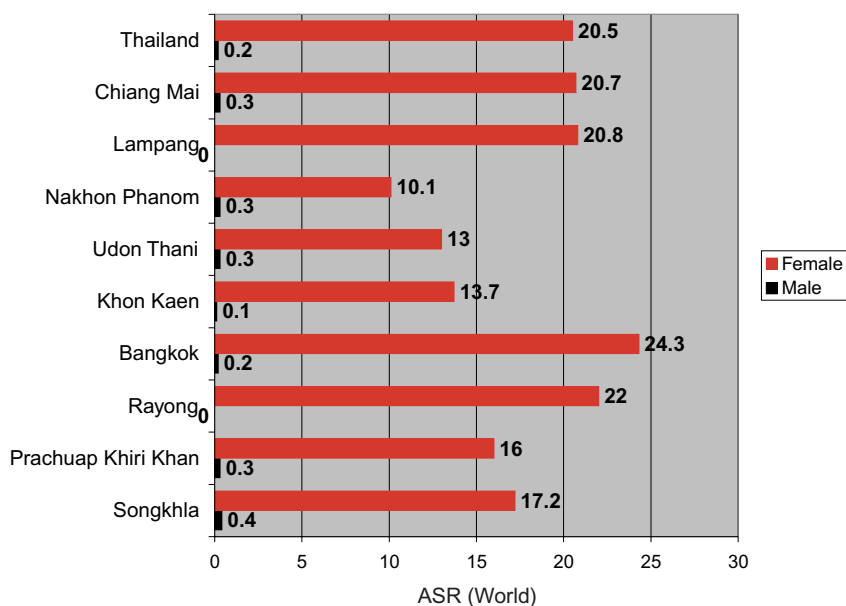
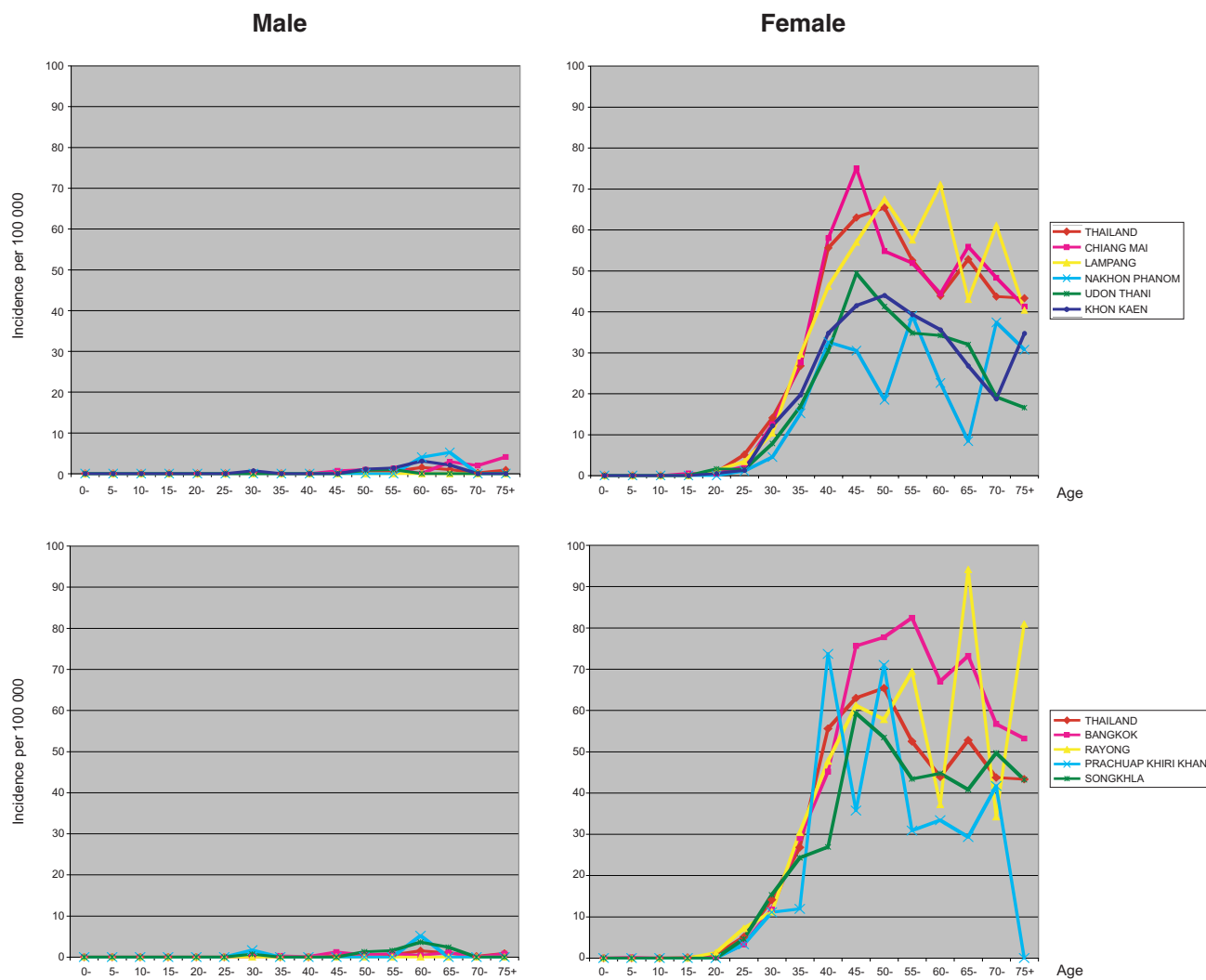


Figure 2.13.2 Age-specific incidence rates of breast cancer, 1998-2000



lation to the risk of breast cancer. Earlier age at menarche has been consistently associated with increased risk of breast cancer and may be higher hormone level through the reproductive years and greater lifetime exposure to endogenous hormone. The risk of breast cancer increase by some 3% per year of delay in age at menopause but the risk is reduced with early menopause. Nulliparous women are at increased risk of breast cancer compared to parous women.

Sex hormones play a central role in the etiology of breast can-

cer and provide evidence for an influence of plasma estrogen on breast cancer risk in postmenopausal women but more limited in premenopausal women. Testosterone is quite consistent to association between testosterone level and postmenopausal breast cancer but it is too limited to relate androgen level to breast cancer risk in premenopausal women. No conclusion can be drawn about the relationship between prolactin, progesterone and melatonin and breast cancer risk in premenopausal women.

There is little increase in risk with post oral contraceptive use in general. Current user and recent user (<10 year since last use) had a modest elevation in risk compared to never user. For postmenopausal hormonal use, increased risk in two subgroups of user : long duration and current user. Increase in risk associated with estrogen plus progestin use appears considerably greater than that for use of estrogen alone

The role of specific dietary factors is not completely resolved. The hypothesis that fat intake was

responsible for high rates of breast cancer but result from prospective studied do not support this concept. Vitamin A or other compound in vitamin A may reduce breast cancer risk but these findings are not conclusive. Alcohol intake is the best established specific dietary risk factor for breast cancer, moderate alcohol intake increases endogenous estrogen levels provide a potential mechanism. The association between weight and postmenopausal risk has been stronger.

Regular physical activity has been hypothesized to prevent breast cancer by reducing circulating level of sex hormones but the relation between physical activity and risk of breast cancer remain unsettled

Ionizing radiation to the chest in cumulative moderate to high doses at young ages substantially increase risk. Less than 1% of all cases of breast cancer have been estimated to result from diagnostic radiography. Current evidence does not support any substantial relationship between exposure to human-made chemicals or electrical field in the environment and breast cancer risk.

Current estimate places the percentage of breast cancer cases primary attributable to inherited factors at 5% to 10%. Mutations in BRCA1 (chromosome 17q21) and BRCA2 (13q12-13) are responsible for most of these inherited breast cancer; mutations in p53 (causing Li-Fraumeni syndrome) and PTEN (causing Cowden's syndrome) account for a small proportion of inherited breast cancer.

Figure 2.13.3 Histological type of breast cancer, 1998-2000

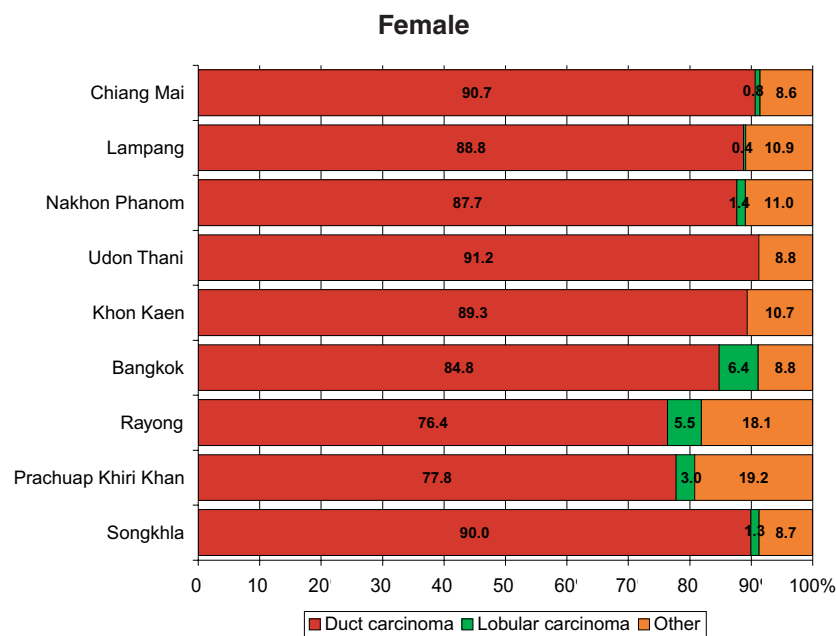
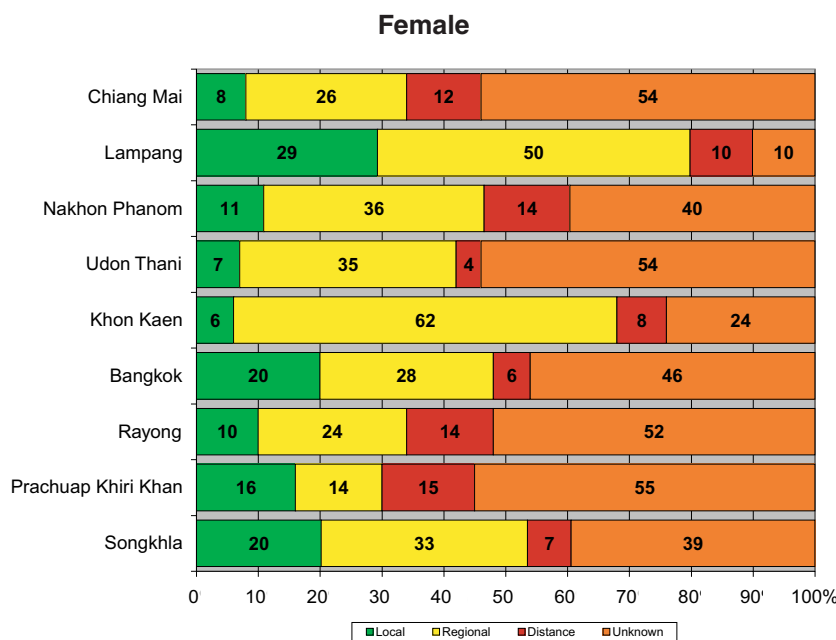


Figure 2.13.4 Stage distribution of breast cancer, 1998-2000



The risk of breast cancer in BRCA1 mutation carriers has been estimated to be as less as 36% and as high as 87%, with an estimate of pooled rate of 65%. Lifetime breast cancer risk for BRCA2 mutation carriers is estimated to be 45% to 84%.