

Overall Cancer Characteristics

Regarding laterality of breast cancer, cancer occurred in right breast only (49%) patients, in left breast only (48%) and bilateral breasts (3%) (Figure 26). Out of 27 bilateral cases, 85% were synchronous tumours (diagnosed simultaneously or <6 months apart) and 15% were metachronous tumours.

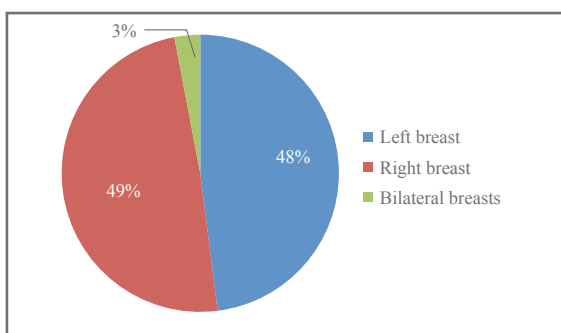


Figure 26. Laterality of breast cancers

Breast cancer occurred in the locations of upper outer quadrant (48%), upper inner quadrant (20%), lower outer quadrant (15%), central (11%) and lower inner quadrant (9%) (Figure 27).

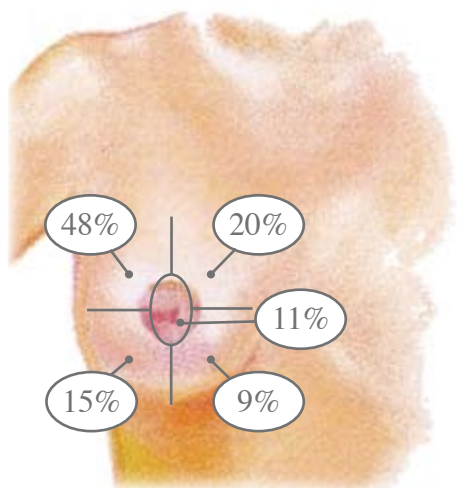


Figure 27. Location of breast cancers

Note: * = percentages add to more than 100% because more than one response could be checked

A number of imaging and cytohistological examinations were used to confirm the diagnosis of breast cancer. These included diagnostic mammography, breast ultrasound, magnetic resonance imaging (MRI), fine needle aspiration (FNA), core needle biopsy (CNB) or excisional biopsy (Tables 4-5).

Table 4. Diagnostic results of mammography, breast ultrasound and magnetic resonance imaging (MRI)

Diagnostic method	Mammogram	Ultrasound	MRI
Total no.	979	963	96
Normal (BI-RADS 1)	113 (12%)	33 (3%)	1 (1%)
Benign (BI-RADS 2)	112 (11%)	45 (5%)	2 (2%)
Probably benign (BI-RADS 3)	136 (14%)	143 (15%)	2 (2%)
Indeterminate (BI-RADS 4a)	367 (38%)	405 (42%)	28 (29%)
Suspicious (BI-RADS 4b)	13 (1%)	12 (1%)	3 (3%)
Diagnostic / malignant (BI-RADS 5)	238 (24%)	325 (34%)	60 (63%)

BI-RADS: Breast Imaging Reporting And Data System

Table 5. Diagnostic results of fine needle aspiration (FNA), core needle biopsy (CNB) and excisional biopsy

Diagnostic method	FNA	CNB	Excisional biopsy
Total no.	601	396	112
Scanty benign (Class I)	6 (1%)	0 (0%)	-
Benign (Class II)	31 (5%)	3 (1%)	-
Atypical (Class III)	50 (8%)	6 (2%)	-
Suspicious (Class IV)	156 (26%)	20 (5%)	1 (1%)
Diagnostic / malignant Class V	358 (60%)	367 (92.7%)	111 (99%)

FNA: Fine needle aspiration; CNB: Core needle biopsy

整體癌症特徵

以乳癌出現位置作統計，49%參加者在右邊乳房發現有乳癌腫瘤、48%在左邊乳房發現有乳癌腫瘤，並有3%病人兩邊乳房均有乳癌腫瘤（圖26）。在27個雙邊乳癌個案中，85%為「同時性腫瘤」（同時確診或兩邊確診時間相距少於6個月），另15%為「非同時性腫瘤」。

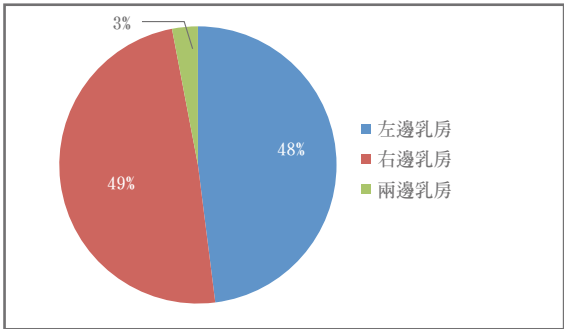


圖26. 乳癌發病位置

乳癌腫瘤位於乳房上外側部（48%），於乳房上內側部（20%）、乳房下外側部（15%）、中央（11%）及乳房下內側部（9%）（圖27）。

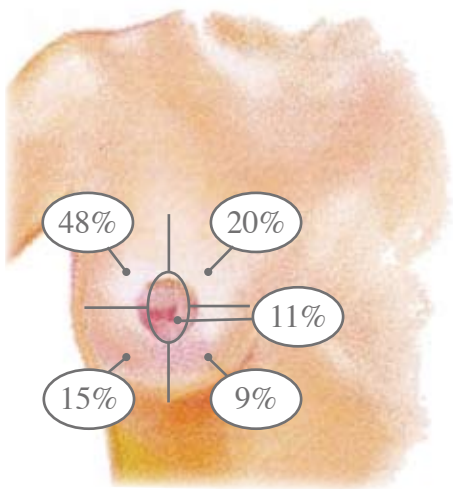


圖27. 乳癌腫瘤位置

備注：* =因參加者可作多於一個選擇，故百份比高於100%

一系列造影及細胞組織性測試，均用於確診乳癌，包括診斷性乳房X光造影、乳房超聲波、磁力共振測試、幼針活組織抽檢、粗針活組織抽檢及切除式活組織檢查（表4至5）。

表4. 乳房X光造影、乳房超聲波及磁力共振之斷診結果

檢查方式	乳房X光造影	乳房超聲波	磁力共振
總數字	979	963	96
正常 (BI-RADS 1)	113 (12%)	33 (3%)	1 (1%)
良性 (BI-RADS 2)	112 (11%)	45 (5%)	2 (2%)
很可能良性 (BI-RADS 3)	136 (14%)	143 (15%)	2 (2%)
不確定 (BI-RADS 4a)	367 (38%)	405 (42%)	28 (29%)
懷疑 (BI-RADS 4b)	13 (1%)	12 (1%)	3 (3%)
確診/惡性 (BI-RADS 5)	238 (24%)	325 (34%)	60 (63%)

BI-RADS：乳房造影報告及數據系統

表5. 幼針活組織抽檢、粗針活組織抽檢及切除式活組織檢查之診斷結果

檢查方式	幼針活組織抽檢	粗針活組織抽檢	切除式活組織檢查
總數字	601	396	112
極少良性 (等級1)	6 (1%)	0 (0%)	—
良性 (等級2)	31 (5%)	3 (1%)	—
異常 (等級3)	50 (8%)	6 (2%)	—
懷疑 (等級4)	156 (26%)	20 (5%)	1 (1%)
確診/惡性 (等級5)	358 (60%)	367 (93%)	111 (99%)

Diagnostic mammography was used in 98% of cases. Thirteen percent of the subjects had normal findings. Abnormalities detected included microcalcifications (48%), followed by opacity (27%), architectural distortion (11%), asymmetric density (8%) and other findings (7%) such as skin thickening and lymph node metastasis (Figure 28).

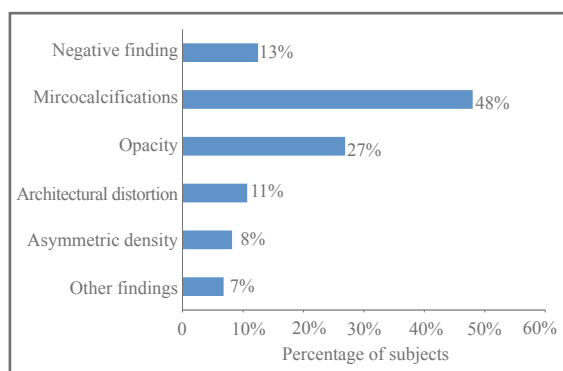


Figure 28. Mammographic findings

Note: * = percentages add to more than 100% because more than one response could be checked

Heterogeneous or extreme dense breast were found in 75% of the subjects (Figure 29).

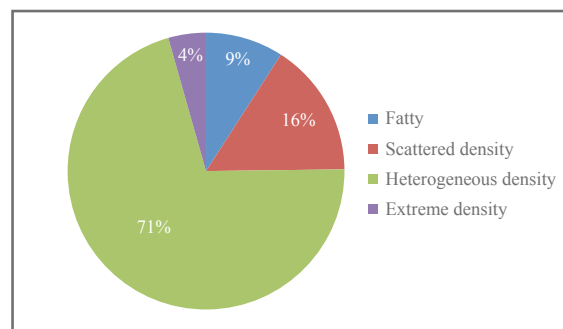


Figure 29. Breast density

Figure 30 showed the common staging methods which were used to determine the extent of cancer spread. Most of the subjects (73%) had chest x-ray and ultrasound abdomen, 23% PET scan, 3.5% either chest x-ray or ultrasound abdomen, 0.5% MRI whole body and 0.1% CT thorax, CT abdomen and bone scan as their staging methods.

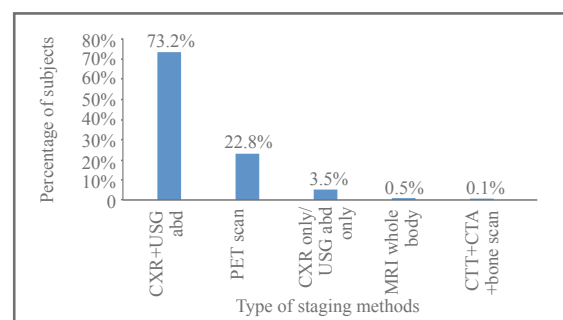


Figure 30. Type of staging methods

Note: CXR + USG abd: Chest X-ray + Ultrasound abdomen
CXR only / USG abd only: Chest X-ray only / Ultrasound abdomen only
MRI whole body: Magnetic resonance imaging whole body
CTT + CTA + bone scan: CT Thorax + CT Abdomen + bone scan

Overall cancer stage

From Surveillance Epidemiology and End Results (SEER) program, stage distribution among the Whites for localized, regional and metastasized cancers were 62%, 31% and 4% respectively while 3% were unstaged.⁵¹ The figure from Sweden Cancer Registry reported more local cancers than that from Singaporean Cancer Registry (82% versus 53%) during 1990-1999.¹⁵

The distribution of cancer stage in the subject cohort was: stage 0 (15%), stage I (34%), stage IIA (26%), stage IIB (12%), stage III (12%) and stage IV (1%) (Figure 31). Among the cancers with advanced stage, 6% of cancers metastasized to other organs such as bone, liver and lung (1 patient), bone and liver (1 patient), bone only (2 patients), lung only (1 patient), liver only (1 patient) and thyroid only (1 patient).

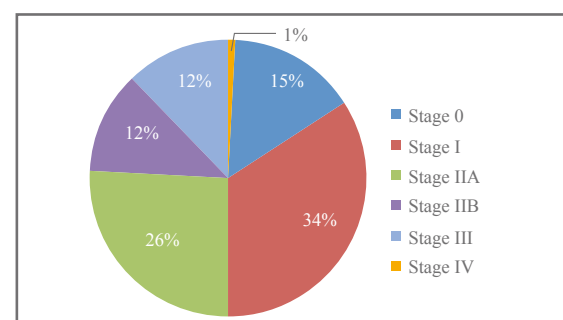


Figure 31. Overall cancer stage

98%個案使用診斷性乳房X光造影。13%的乳房X光造影檢查屬正常結果。不尋常的結果包括微鈣化點(48%)、不透明影像(27%)、結構扭曲(11%)、非對稱性陰影(8%)及其餘發現(7%)，包括皮膚增厚及淋巴轉移等(圖28)。

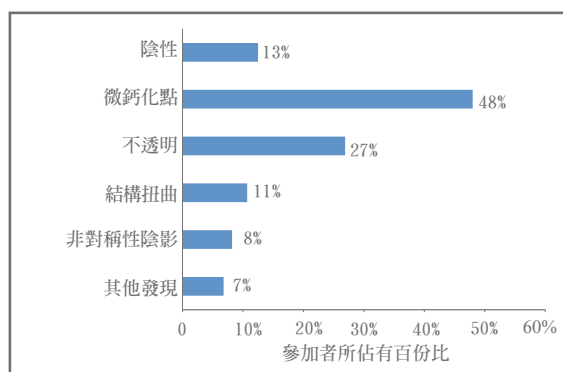


圖28. 乳房X光造影的檢查結果

備注：* =因參加者可作多於一個選擇，故百分比高於100%

根據圖29顯示，75%病人的乳房密度為異質性或極高密度。

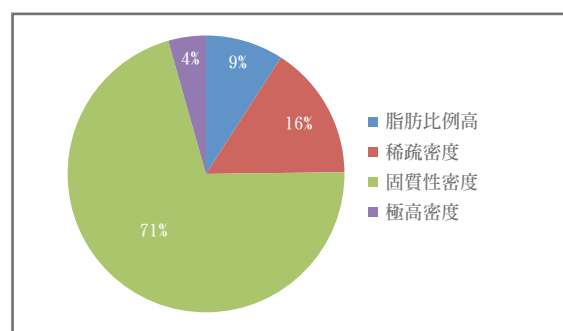


圖29. 乳房密度

圖30列出主要的診斷乳癌期數方式，用來斷定癌症腫瘤的擴散情況。大部份(73%)是透過胸部X光及腹部超聲波作診斷乳癌期數，23%的參加者使用正電子電腦掃描，3.5%使用胸部X光或腹部超聲波，0.5%使用全身磁力共振，以及0.1%使用胸部電子掃描、腹部電子掃描及骨骼掃描來診斷乳癌期數。

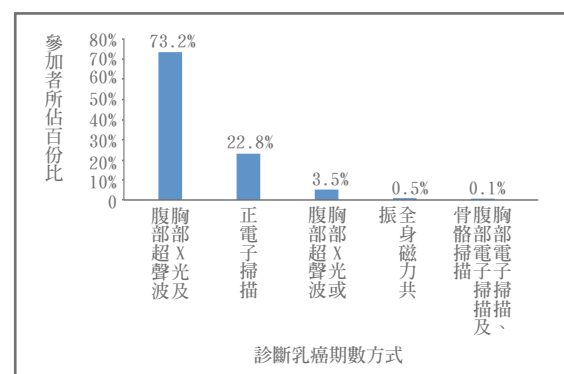


圖30. 診斷乳癌期數的方式

整體乳癌期數

根據「監測、流行病學及最終結果計劃」(SEER)，白人的乳癌期數分佈為62%癌症範圍局部在乳房內，31%癌症擴展至乳房周邊淋巴組織，4%癌症擴散至其他器官，並有3%為不明個案。⁵¹ 除此以外，瑞典癌症資料庫提供的數據指，1990至1999年當地的局部癌症個案，較新加坡癌症資料庫所記錄的為多(82%比53%)。¹⁵

參加者的癌症期數分佈為：第0期(15%)、第I期(34%)、第IIA期(26%)、第IIB期(12%)、第III期(12%)，及第IV期(1%)。在晚期個案中，6%癌細胞擴散至其他器官如骨、肝及肺部(1名病人)、骨與肝臟(1名病人)、骨骼(2名病人)、肺部(1名病人)、肝臟(1名病人)及甲狀腺(1名病人)。

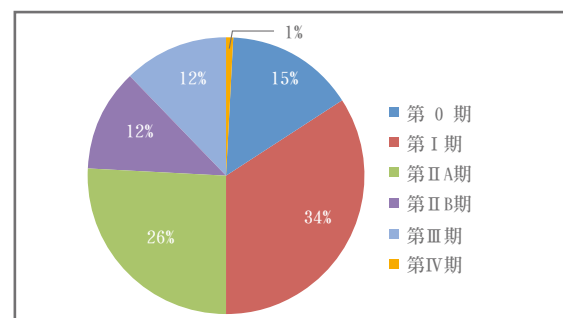
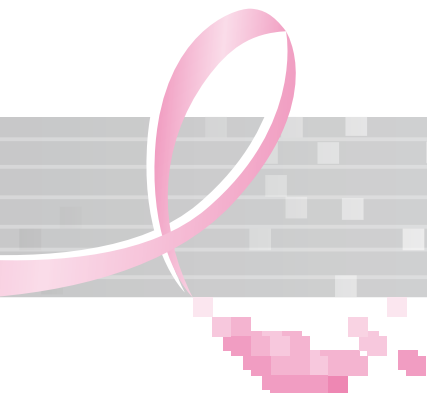


圖31. 病人的癌症期數



Cancer characteristics of invasive breast cancer

In 2002 Singapore has introduced a nation-wide mammographic screening program- BreastScreen Singapore, the clinical details showed the median size of lesions were smaller in screen-detected cancers compared to symptomatic cancers (18mm vs. 23mm).⁴⁸

In our patient cohort, invasive breast cancer accounted for 85% of all breast cancer cases. More than 80% of invasive breast cancers were early stage, only 15% were advanced stage. The median and mean sizes of invasive breast cancer were 1.8 cm and 2.2cm respectively (range: 0.01-20.1 cm). More than 50% had invasive tumours of 2 cm or below, 40% with tumour size between 2.01-5 cm and 4% with tumour size of 5 cm and over (Figure 32).

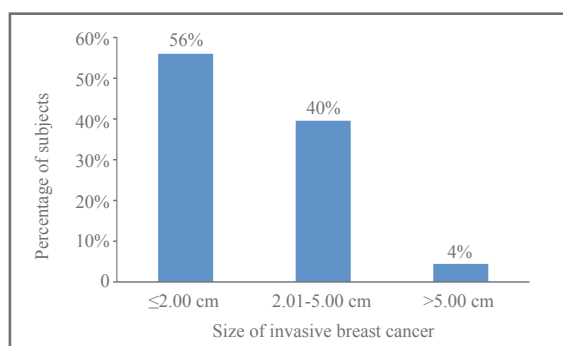


Figure 32. Size of invasive breast cancers

Ninety-two percent of invasive breast cancer cases underwent sentinel lymph node biopsy or axillary dissection to detect lymph node involvement. Nodal status was negative in 60% of the patients, 28% had 1-3 positive lymph nodes, 8% had 4-9 positive lymph nodes and 4% had more than 10 positive lymph nodes (Figure 33).

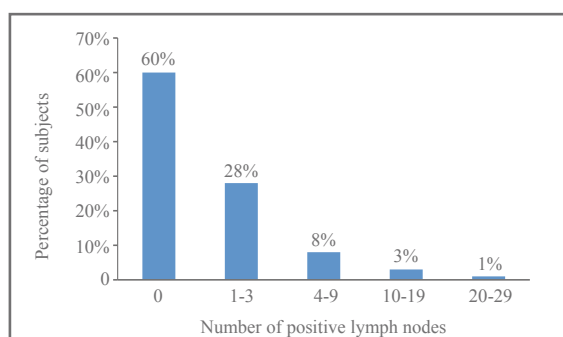


Figure 33. Number of nodes positive in invasive breast cancer patients

Cancer characteristics of in situ breast cancer only

Among all breast cancers, 15% had carcinoma in situ only. Amongst them, 4% only had lymph node involvement. The median and mean sizes of in situ breast cancer were 2.0 cm and 2.5 cm respectively (range: 0.2-9.0 cm). Fifty-four percent of patients had in situ tumours below 2.0 cm, 39% between 2.01-5 cm and 7% 5 cm and over (Figure 34).

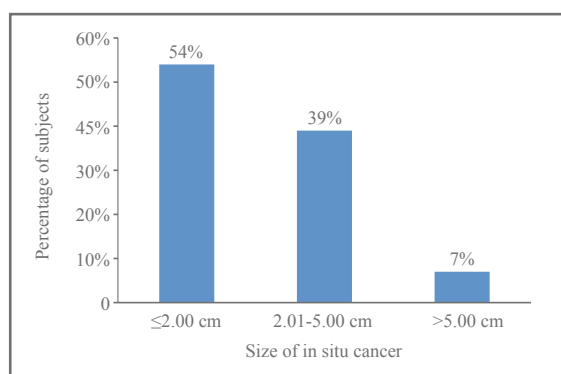


Figure 34. Size of in situ breast cancers only

入侵性乳癌資料

在2002年，新加坡政府策動一個全民性的乳房X光造影檢查——「新加坡乳房普查計劃」(BreastScreen Singapore)。經臨床診斷發現，透過乳癌診斷檢查確診的病人，其腫瘤面積的中位數，較出現病徵才確診的病人小（18毫米比23毫米）。⁴⁸

在我們的參加者中，入侵性乳癌佔所有乳癌個案的85%。逾80%的入侵性乳癌個案屬早期，只有15%屬晚期。入侵性乳癌腫瘤大小中位數及平均數分別為1.8厘米及2.2厘米（範圍：0.01-20.1厘米）。超過50%的入侵性腫瘤大小在2厘米或以下，40%的腫瘤大小介乎2.01至5厘米，4%的腫瘤大小在5厘米或以上（圖32）。

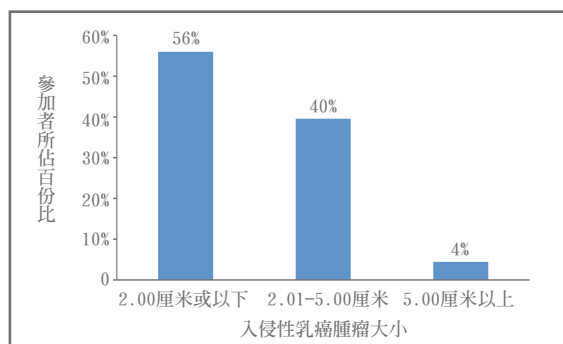


圖32. 入侵性乳癌腫瘤大小

92%的入侵性乳癌個案透過前哨淋巴組織檢查或腋下淋巴摘除，診斷癌細胞擴散至腋下淋巴的程度。60%病人的淋巴結感染測試呈陰性反應。28%有1至3個陽性淋巴結、8%有4至9個陽性淋巴結、4%有10個或以上陽性淋巴結（圖33）。

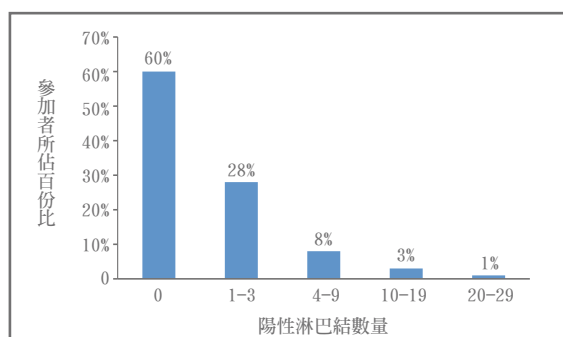


圖33. 入侵性乳癌病人的陽性淋巴結數量

原位癌資料

在所有乳癌病人中，15%屬原位癌。當中只有4%病人的癌細胞擴散至淋巴結。原位癌個案的大小中位數及平均數分別為2.0厘米及2.5厘米（範圍：0.2至9.0厘米）。54%的原位癌腫瘤在2厘米以下，39%介乎2.01至5厘米、7%在5厘米或以上（圖34）。

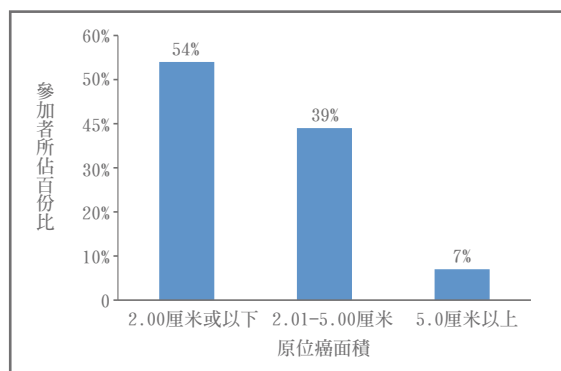


圖34. 原位癌腫瘤大小