香港乳癌基金會策動 A Hong Kong Breast Cancer Foundation Initiative

香港乳癌資料庫
Hong Kong Breast Cancer Registry

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編者的話

《香港乳癌資料庫簡報》是《香港乳癌資料庫》年度報告的補充，與參與的患者、醫生和醫療專業人員分享研究所得，並告知資料庫的最新動向。本期簡報旨在補充《香港乳癌資料庫第五號報告》，探討有癥狀下發現和定期檢測發現乳癌的患者，在癌症特性方面的差異。研究結果顯示，採用乳房 X 光造影檢測，有利於盡早發現乳癌，這正是香港乳癌基金會推動 40 歲以上婦女應接受定期檢測的原因。我們希望有關研究能為乳癌診斷提供洞見，進而鼓勵更多研究和討論，促使當局修改政策，使之與我們消除乳癌威脅的使命配合。

患者在有癥狀下發現和在定期檢測發現乳癌的癌症特性及所接受治療的差異研究

前言

根據《香港乳癌資料庫第五號報告》，香港乳癌患者中絕大部分的腫瘤都是在有癥狀下發現的，而非由定期檢測發現。在 9,594 宗乳癌病例中，大部分（84.9%）屬於有癥狀下發現，少於十分之一（8.8%）是經由乳房 X 光造影檢測發現。

在很多國家，乳房 X 光造影檢測效用明顯，並被視為檢測婦女乳癌的「金科玉律」。自從九十年代開始，乳癌全民普檢已經在多個國家推行，包括一些亞洲國家[1]。經定期檢測發現的癌腫瘤體積較小、較少出現淋巴結轉移，因此通常屬於早期癌症，所需輔助治療較少[2-5]。

不過，乳癌全民普檢在香港依然處於討論階段。儘管西方社會的數據顯示，乳房 X 光造影檢測可以降低 50 歲以上婦女的死亡率約 30%[6]，不過有主張認為，在決定應否在香港推行以乳房 X 光造影檢測的全民普檢之前，必需先取得更多本地數據作考量。

目前，乳房 X 光造影檢測在香港尚未普及，本期簡報旨在提供數據和展示香港乳癌診斷和治療的真實狀況，集中分析患者在有癥狀下發現和定期檢測發現乳癌的癌症特性及他們所接受治療的差異。

研究對象及方法

《香港乳癌資料庫第五號報告》紀錄了 2008 到 2013 年間，從公立和私立醫院 / 診所收集的 9,804 名患者的資料。來自公立 / 私立醫療機構的病例分別佔 65% 及 35%；報告分析了在有癥狀下發現或定期檢測發現乳癌的患者資料，探討乳癌診斷的方法和癌症特性的關係。這次亞組分析只涵蓋 40 歲或以上、已填妥乳癌資料庫第一及第二部分資料、以及在有癥狀下發現或定期檢測發現乳癌的患者。有癥狀下發現的患者是指那些出現病癥才自我發現的患者；而定期檢測發現的患者是指那些沒有臨床癥狀但經由乳房 X 光造影檢測發現乳癌的患者。乳癌特性差異的病理學分析只限於入侵性腫瘤。使用卡方檢定（Chi-square）測試來比較兩組患者（有癥狀下發現和定期檢測發現）在多個類別變數的差異，並利用學生 t 檢驗 (Student's t test) 和中位數檢驗 (Median test) 來衡量兩組患者之間的確診年齡平均數和中位數，以及腫瘤大小的差異。概率值（p-value）低於 0.05 的代表在統計學上有明顯的差異，而所有統計分析均使用 SPSS 軟件版本 19.0 進行（SPSS Inc., Chicago, IL, USA）。

結果

這次亞組研究一共收集和分析了 7,013 個乳癌病例，當中包括 6,746 個 40 歲或以上患者的癌症特性數據（267 名患者患有雙側腫瘤）。整體患者在確診乳癌時的平均 ± 標準偏差年齡為 52.9±9.2 歲（年齡範圍 40.0—101.4），而分析病例當中有癥狀下發現和定期檢測發現腫瘤的平均年齡分別為 52.9±9.3 歲和 52.1±7.1 歲。

有癥狀下發現和定期檢測發現的患者，其統計資料差異列載於表一。研究結果顯示，定期檢測發現的患者具有較高的教育水平（大學或以上：18.5% 比 9.6%；p<0.001）。定期檢測發現的患者當中，確診時擔當專業或文職職位的佔較大比例（39.4% 比 26.9%；p< 0.001）。定期檢測發現的患者比有癥狀下發現的患者較多表示有乳癌的家族歷史（20.0% 比 13.2%；p<0.001）。

表 1. 40歲或以上有癥狀下發現與定期檢測發現的乳癌患者統計資料比較

	總數 人數 (%) (總人數 =6,746)	有癥狀下發現群組 人數 (%) (總人數 =6,109)	定期檢測發現群組 人數 (%) (總人數 =637)	P 值
確診年齡 (歲)				
平均年齡 ± 標準差	52.9±9.2	52.9±9.3	52.1±7.1	0.005
年齡中位數	50.8	50.8	50.8	沒有顯著差別
年齡組別				
40 — 49	3,071 (45.5)	2,787 (45.6)	284 (44.6)	X^2=29.690; p<0.001
50 — 59	2,400 (35.6)	2,131 (34.9)	269 (42.2)	
60 — 69	871 (12.9)	800 (13.1)	71 (11.1)	
70 — 79	302 (4.5)	290 (4.7)	12 (1.9)	
80+	102 (1.5)	101 (1.7)	1 (0.2)	
居住地區				
香港島	1,003 (15.3)	843 (14.2)	160 (26.1)	X^2=67.585; p<0.001
九龍	1,523 (23.2)	1,376 (23.1)	147 (23.9)	
新界	3,951 (60.2)	3,647 (61.3)	304 (49.5)	
離島	82 (1.3)	79 (1.3)	3 (0.3)	
教育水平				
小學或以下	2,251 (33.8)	2,122 (35.2)	129 (20.4)	X^2=84.534; p<0.001
中學至大專	3,716 (55.8)	3,331 (55.2)	385 (61.0)	
大學或以上	693 (10.4)	576 (9.6)	117 (18.5)	
職業				
專業 / 文職人員	1,843 (28.0)	1,599 (26.9)	244 (39.4)	X^2=50.160; p<0.001
非文職 / 勞動工作者	1,658 (25.2)	1,550 (26.0)	108 (17.4)	
自僱人士	165 (2.5)	148 (2.5)	17 (2.7)	
家庭主婦	2,275 (34.6)	2,079 (34.9)	196 (31.6)	
退休或待業人士	634 (9.6)	579 (9.7)	55 (8.9)	
乳癌家族史				
有	918 (13.8)	793 (13.2)	125 (20.0)	X^2=22.115; p<0.001
沒有	5,735 (86.2)	5,234 (86.8)	501 (80.0)	

表二顯示兩組患者癌症特性的差異。一如所料，定期檢測發現與有癥狀下發現的乳癌相比，有相當高比例屬於原位癌（45.0% 比 9.0%；p<0.001）。就診斷為入侵性癌症的患者而言，定期檢測發現的患者有較大可能獲診斷為早期癌症（I 至 IIB 期）（92.6% 比 80.7%；p<0.001），較少出現腋下淋巴結轉移（21.0% 比 42.1%；p<0.001）。超過一半定期檢測發現的患者（64.2%）被診斷為第一期癌症，而有癥狀下發現的患者則只有 32.5%。少於十分之一的定期檢測發現患者在最初診斷時，被診斷為第三期或第四期癌症，這個比率遠遠低於有癥狀下發現的患者（7.4% 比 19.3%；p<0.001）。

兩組患者當中，5,609 個附有病理學數據的入侵性乳癌病例隨後用於病理學性質差異的分析，分析結果列於表二。分析顯示，定期檢測發現的腫瘤平均大小比有癥狀下發現的腫瘤直徑小一厘米（1.3±1.1 厘米 比 2.3±1.4 厘米；p<0.001）。

表 2. 40歲或以上有癥狀下發現與定期檢測發現的乳癌患者的癌症特性比較

	總數 人數 (%) (總人數 =7,013)	有癥狀下發現群組 人數 (%) (總人數 =6,286)	定期檢測發現群組 人數 (%) (總人數 =727)	P 值
腫瘤種類				
入侵性 +/- 原位癌	5,975 (87.2)	5,577 (91.0)	398 (55.0)	X^2=753.378; p<0.001
原位癌	877 (12.8)	551 (9.0)	326 (45.0)	
淋巴結期數*				
N0	3,469 (59.3)	3,160 (57.9)	309 (79.0)	
N1	1,572 (26.9)	1,508 (27.6)	64 (16.4)	X^2=70.348; p<0.001
N2	527 (9.0)	515 (9.4)	12 (3.1)	
N3	280 (4.8)	274 (5.0)	6 (1.5)	
癌症期數*				
I	2,047 (34.6)	1,794 (32.5)	253 (64.2)	
IIA	1,880 (31.8)	1,788 (32.4)	92 (23.4)	
IIB	896 (15.1)	876 (15.9)	20 (5.1)	X^2=173.284; p<0.001
III	943 (15.9)	916 (16.6)	27 (6.9)	
IV	149 (2.5)	147 (2.7)	2 (0.5)	
早期 (I-IIB 期)	4,823 (81.5)	4,458 (80.7)	365 (92.6)	X^2=34.557; p<0.001
晚期 (III-IV 期)	1,092 (18.5)	1,063 (19.3)	29 (7.4)	
腫瘤組織學類別*				
乳腺管癌	4,755 (85.5)	4,453 (86.0)	302 (78.6)	X^2=15.680; p<0.001
乳小葉癌	232 (4.2)	208 (4.0)	24 (6.3)	
其他	574 (10.3)	516 (10.0)	58 (15.1)	
腫瘤大小 (厘米)*				
平均大小 ± 標準差	2.2±1.4	2.3±1.4	1.3±1.1	p<0.001
大小中位數	2.00	2.10	1.10	p<0.001
≦ 0.10	87 (1.6)	64 (1.3)	23 (6.1)	
0.11-0.50	251 (4.6)	188 (3.7)	63 (16.7)	
0.51-1.00	472 (8.7)	381 (7.5)	91 (24.1)	X^2=376.112; p<0.001
1.01 - 2.00	2,014 (37.0)	1,874 (37.0)	140 (37.0)	
2.01-5.00	2,409 (44.3)	2,353 (46.5)	56 (14.8)	
>5.00	206 (3.8)	201 (4.0)	5 (1.3)	
分級 *				
1	1,006 (19.5)	883 (18.4)	123 (34.6)	X^2=67.658; p<0.001
2	2,262 (43.8)	2,108 (43.8)	154 (43.4)	
3	1,897 (36.7)	1,819 (37.8)	78 (22.0)	
淋巴管入侵*				
有	1,620 (32.8)	1,566 (34.1)	54 (15.4)	X^2=51.678; p<0.001
沒有	3,316 (67.2)	3,020 (65.9)	296 (84.6)	
荷爾蒙受體*				
雌激素受體呈陽性	4,161 (76.4)	3,849 (75.9)	312 (83.4)	X^2=10.970; p=0.001
黃體素受體呈陽性	3,484 (64.2)	3,226 (63.8)	258 (69.4)	X^2=4.704; p=0.033
第二型上皮生長因子受體呈陽性	1,167 (22.2)	1,095 (22.4)	72 (19.8)	沒有顯著差別
Ki-67 指數*				
<14%	1,222 (43.1)	1,088 (41.4)	134 (64.1)	X^2=40.650; p<0.001
14-49%	1,283 (45.3)	1,222 (46.6)	61 (29.2)	
≧ 50%	329 (11.6)	315 (12.0)	14 (6.7)	
生物學類型*				
管狀 A 型	1,085 (20.6)	966 (19.7)	119 (32.7)	
管狀 B 型 (第二型上皮生長因子受體呈陰性)	860 (16.4)	822 (16.8)	38 (10.4)	
管狀 B 型 (第二型上皮生長因子受體呈陽性)	707 (13.4)	662 (13.5)	45 (12.4)	X^2=46.580; p<0.001
第二型上皮生長因子受體呈陽性	459 (8.7)	432 (8.8)	27 (7.4)	
三陰性	643 (11.5)	618 (12.6)	25 (6.9)	
管狀 A/B 型 (第二型上皮生長因子受體呈陰性)	1,504 (28.6)	1,394 (28.5)	110 (30.2)	

* 只包括入侵性腫瘤數據

大約一半（50.5%）有癥狀下發現的腫瘤大於兩厘米，但定期檢測發現的腫瘤側只有 16.1% 是大於兩厘米。相對於有癥狀下發現的癌症，定期檢測發現的癌症較多屬分級 1（34.6% 比 18.4%；p<0.001），較多屬其他組織學類型（15.1% 比 10.0%；p<0.001），而且較少出現高的 Ki-67 指數（35.9% 比 58.6%；p<0.001）。與有癥狀下發現的癌症相比，定期檢測發現的癌症較常屬於雌激素受體（ER）呈陽性（83.4% 比 75.9%；p<0.001）或黃體素受體（PR）呈陽性（69.4% 比 63.8%；p=0.033）。不過，致癌基因第二型上皮生長因子受體（HER2）在兩組患者之間沒有顯著差異。定期檢測發現的癌症比有癥狀下發現的癌症較少為三陰性（ER-PR-HER2-）（6.9% 比 12.6%；p<0.001）。

幾乎所有患者（98.4%）都要接受手術治療。定期檢測發現的患者採取全乳切除術的比例低於有癥狀下發現的患者（46.3% 比 67.4%；p<0.001）。較高比例的定期檢測發現患者無需進行淋巴結手術（18.3% 比 3.7%；p<0.001），就是要進行淋巴結手術，定期檢測發現的患者較多只進行前哨淋巴結切片（54.1% 比 29.0%；p<0.001）。在有癥狀下發現的病例中，需要進行化療的個案幾乎是定期檢測發現的三倍（66.1% 比 25.0%；p<0.001）。需要接受放射性治療、內分泌治療和靶向治療的比率，在有癥狀下發現的患者也顯著高於定期檢測發現的患者（表三）。

表 3. 40歲或以上有癥狀下發現與定期檢測發現的乳癌患者所接受的癌症治療方法比較

	總數 人數 (%) (總人數 =7,013)	有癥狀下發現群組 人數 (%) (總人數 =6,286)	定期檢測發現群組 人數 (%) (總人數 =727)	P 值
手術	6,896 (98.4)	6,176 (98.3)	720 (99.2)	沒有顯著差別
手術種類				
乳房保留手術	2,402 (34.9)	2,015 (32.6)	387 (53.8)	X^2=126.460; p<0.001
全乳切除手術	4,490 (65.1)	4,157 (67.4)	333 (46.3)	
淋巴結手術				
前哨淋巴結切片	2,168 (31.6)	1,780 (29.0)	388 (54.1)	X^2=544.859; p<0.001
腋下淋巴切除 +/- 前哨淋巴結切片	4,325 (63.1)	4,127 (67.2)	198 (27.6)	
沒有進行淋巴結手術	361 (5.3)	230 (3.7)	131 (18.3)	
化學治療	4,284 (61.8)	4,105 (66.1)	179 (25.0)	X^2=460.449; p<0.001
放射性治療	4,340 (63.1)	3,935 (63.8)	405 (57.3)	X^2=11.558; p=0.001
內分泌治療	4,689 (67.9)	4,319 (69.8)	370 (52.0)	X^2=92.096; p<0.001
靶向治療	518 (7.5)	489 (7.9)	29 (4.0)	X^2=13.874; p<0.001

結論

乳房 X 光造影檢測有利於及早發現乳癌。雖然乳房 X 光造影檢測能減低死亡率這個概念還需要在香港作進一步評定，但我們的數據顯示，通過定期檢測，及早發現乳癌可以減少入侵性治療的需要，這也意味著治療費用可以減少，從而也減輕醫療體系的負擔。

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Editor's message

The BCR Bulletin complements the annual Hong Kong Breast Cancer Registry Report, shares research findings of the Registry with participating patients, doctors and medical professional, and keeps them up to date with the activities of the Registry. This issue intends to complement the "Hong Kong Breast Cancer Registry Report No. 5" on the cancer characteristics between self and screen detected breast cancer patients in Hong Kong. The findings revealed that there are benefits of early detection of breast cancer by mammography, which is advocated by the Hong Kong Breast Cancer Foundation for women aged 40 or above. We hope our study provides insight into breast cancer detection, and that encourages more research and discussion conducive to policy change in synch with our mission of eradicating the threat of breast cancer.

A Study on the Differences in the Cancer Characteristics Between Self Detected and Screen Detected Patients and the Treatments They Received

Introduction

According to the Hong Kong Breast Cancer Registry Report No. 5, an overwhelming majority of tumors in the Hong Kong population were detected by symptoms rather than by screening. Majority (84.9%) of the 9,594 breast cancer cases were self detected with symptoms, whereas less than one-tenth (8.8%) of the cases were detected by mammography. Mammography has been shown to have benefits in many countries and has been regarded as the "gold standard" of screening for breast cancer in women. Population-based screening programs have been launched in various countries, including some Asian countries, since the 90's[1]. Screen detected cancers were found to be smaller in size, have less often nodal metastases and thus usually of earlier cancer stage, which require less adjuvant treatment[2-5]. However, population-based screening is still under debate in Hong Kong. Although evidence from Western communities showed that screening mammography could reduce mortality by about 30% in women aged 50 years or above[6], others argued that more local data was needed for local considerations for population-based mammogram screening. This bulletin aims to provide data and present the actual scenario of breast cancer diagnosed and treated in Hong Kong in the presence of limited opportunistic mammogram screening. Analysis was focused on the differences in the cancer characteristics between self and screen detected breast cancer patients and the treatments they received.

Subjects & Methods

The "Hong Kong Breast Cancer Registry Report No. 5" covered a cohort of 9,804 patients recruited from both public and private hospitals/clinics from 2008 to 2013, with contribution from 65/35% public/private cases. A sub-analysis study on the data of the patients who were self or screen detected their cancers were conducted to examine the relationship of methods of cancer detection and cancer characteristics. This sub-analysis only included patients aged 40 or above, who have completed parts 1 and 2 of the BCR, and who were self or screen detected their cancers. Self detected patients refers to those who were presented with symptoms and were self detected while screen detected patients refers to those who were clinically asymptomatic but were found to have breast cancers by screening mammography. The differences in the pathological characteristics analyses were restricted to invasive tumours only. The Chi-square test was used to evaluate differences in categorical variables between the two groups of patients (self and screen detected) while the student's t test and median test were used to evaluate the differences in the mean and median ages at diagnosis and tumour sizes between the two groups of patients. A p-value <0.05 was considered to be statistically significant and all statistical analyses were performed using SPSS software version 19.0 (SPSS Inc., Chicago, IL, USA).

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Results

Cancer characteristics data for 7,013 breast cancer cases on 6,746 patients (267 patients with bilateral tumors) aged 40 years old or above were collected and analyzed. The mean±SD age of the overall patient population at the time of breast cancer diagnosis was 52.9±9.2 years (range 40.0–101.4), while that of the cases with self detected and screen detected tumours were 52.9±9.3 and 52.1±7.1 years, respectively.

The differences in the sociodemographic background of the self and screen detected patients were shown in Table 1. It was found that screen detected patients had higher education level (undergraduate or above: 18.5% vs. 9.6%; p<0.001). A larger proportion of screen detected patients had a professional/clerical occupation at the time of diagnosis (39.4% vs. 26.9%; p<0.001). More screen detected patients reported having positive family history of breast cancer than that in self detected patients (20.0% vs. 13.2%; p<0.001).

Table 1 Sociodemographics difference among self and screen detected breast cancer patients aged ≧ 40

	Total, N (%) (N=6,746)	Self detected, N (%) (N=6,109)	Screen detected, N (%) (N=637)	Sig.
Age at diagnosis (yrs)				
Mean ± SD	52.9±9.2	52.9±9.3	52.1±7.1	0.005
Median	50.8	50.8	50.8	NS
Age Group				
40 – 49	3,071 (45.5)	2,787 (45.6)	284 (44.6)	X^2=29.690; p<0.001
50 – 59	2,400 (35.6)	2,131 (34.9)	269 (42.2)	
60 – 69	871 (12.9)	800 (13.1)	71 (11.1)	
70 – 79	302 (4.5)	290 (4.7)	12 (1.9)	
80+	102 (1.5)	101 (1.7)	1 (0.2)	
Residence district				
Hong Kong Island	1,003 (15.3)	843 (14.2)	160 (26.1)	X^2=67.585; p<0.001
Kowloon	1,523 (23.2)	1,376 (23.1)	147 (23.9)	
New Territories	3,951 (60.2)	3,647 (61.3)	304 (49.5)	
Islands	82 (1.3)	79 (1.3)	3 (0.3)	
Education level				
Primary or below	2,251 (33.8)	2,122 (35.2)	129 (20.4)	X^2=84.534; p<0.001
Secondary or matriculation	3,716 (55.8)	3,331 (55.2)	385 (61.0)	
Undergraduate or above	693 (10.4)	576 (9.6)	117 (18.5)	
Occupation				
Professional / Clerical	1,843 (28.0)	1,599 (26.9)	244 (39.4)	X^2=50.160; p<0.001
Non-clerical / Labour	1,658 (25.2)	1,550 (26.0)	108 (17.4)	
Self-employed	165 (2.5)	148 (2.5)	17 (2.7)	
Housewife	2,275 (34.6)	2,079 (34.9)	196 (31.6)	
Retired / Unemployed	634 (9.6)	579 (9.7)	55 (8.9)	
Family history				
Yes	918 (13.8)	793 (13.2)	125 (20.0)	X^2=22.115; p<0.001
No	5,735 (86.2)	5,234 (86.8)	501 (80.0)	

Table 2 shows the differences in the cancer characteristics between the two groups of patients and as expected, a much higher proportion of screen detected breast cancers were in situ tumours (45.0% vs. 9.0%; p<0.001) than those found by self detection. For those patients who were diagnosed with invasive cancers, screen detected patients were more likely to be diagnosed with earlier cancer stages (stages I-IIB) (92.6% vs. 80.7%; p<0.001) and had less often axillary nodal metastases (21.0% vs. 42.1%; p<0.001). Over half of the screen detected patients (64.2%) were diagnosed with stage I cancer, while that figure for self detected patients was only 32.5%. Less than one-tenth of the screen detected patients were diagnosed with stages III or IV disease at initial diagnosis, and the rate was much lower than that for self detected patients (7.4% vs 19.3%; p<0.001).

5,609 invasive breast cancer cases with available pathological data were used for subsequent analyses on the differences in the pathological characteristics among the two groups of patients and the results were shown in Table 2. It was found that the mean tumour size for the screen detected cancers was smaller than that for the self detected cancers by 1 cm (1.3±1.1 cm vs.

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Table 2 Cancer characteristics of self and screen detected tumors among patients aged ≧ 40

	Total, N (%) (N=7,013)	Self detected, N (%) (N=6,286)	Screen detected, N (%) (N=727)	Sig.
Type of tumour				
Invasive +/- In situ	5,975 (87.2)	5,577 (91.0)	398 (55.0)	X^2=753.378; p<0.001
In situ only	877 (12.8)	551 (9.0)	326 (45.0)	
Nodal status*				
N0	3,469 (59.3)	3,160 (57.9)	309 (79.0)	
N1	1,572 (26.9)	1,508 (27.6)	64 (16.4)	X^2=70.348; p<0.001
N2	527 (9.0)	515 (9.4)	12 (3.1)	
N3	280 (4.8)	274 (5.0)	6 (1.5)	
Cancer stage*				
I	2,047 (34.6)	1,794 (32.5)	253 (64.2)	
IIA	1,880 (31.8)	1,788 (32.4)	92 (23.4)	
IIB	896 (15.1)	876 (15.9)	20 (5.1)	X^2=173.284; p<0.001
III	943 (15.9)	916 (16.6)	27 (6.9)	
IV	149 (2.5)	147 (2.7)	2 (0.5)	
Early stage (Stage I-IIB)	4,823 (81.5)	4,458 (80.7)	365 (92.6)	X^2=34.557; p<0.001
Advanced stage (III-IV)	1,092 (18.5)	1,063 (19.3)	29 (7.4)	
Histological type*				
Ductal	4,755 (85.5)	4,453 (86.0)	302 (78.6)	X^2=15.680; p<0.001
Lobular	232 (4.2)	208 (4.0)	24 (6.3)	
Others	574 (10.3)	516 (10.0)	58 (15.1)	
Tumour size (cm)*				
Mean ± SD	2.2±1.4	2.3±1.4	1.3±1.1	p<0.001
Median	2.00	2.10	1.10	p<0.001
≦ 0.10	87 (1.6)	64 (1.3)	23 (6.1)	
0.11-0.50	251 (4.6)	188 (3.7)	63 (16.7)	
0.51-1.00	472 (8.7)	381 (7.5)	91 (24.1)	X^2=376.112; p<0.001
1.01 - 2.00	2,014 (37.0)	1,874 (37.0)	140 (37.0)	
2.01-5.00	2,409 (44.3)	2,353 (46.5)	56 (14.8)	
>5.00	206 (3.8)	201 (4.0)	5 (1.3)	
Grade*				
1	1,006 (19.5)	883 (18.4)	123 (34.6)	X^2=67.658; p<0.001
2	2,262 (43.8)	2,108 (43.8)	154 (43.4)	
3	1,897 (36.7)	1,819 (37.8)	78 (22.0)	
Lymphovascular invasion*				
Yes	1,620 (32.8)	1,566 (34.1)	54 (15.4)	X^2=51.678; p<0.001
No	3,316 (67.2)	3,020 (65.9)	296 (84.6)	
Hormone receptor status*				
ER positive	4,161 (76.4)	3,849 (75.9)	312 (83.4)	X^2=10.970; p=0.001
PR positive	3,484 (64.2)	3,226 (63.8)	258 (69.4)	X^2=4.704; p=0.033
HER2 positive	1,167 (22.2)	1,095 (22.4)	72 (19.8)	NS
Ki-67 Index*				
<14%	1,222 (43.1)	1,088 (41.4)	134 (64.1)	X^2=40.650; p<0.001
14-49%	1,283 (45.3)	1,222 (46.6)	61 (29.2)	
≧ 50%	329 (11.6)	315 (12.0)	14 (6.7)	
Biological substype*				
Luminal A	1,085 (20.6)	966 (19.7)	119 (32.7)	
Luminal B (Her2 Neg)	860 (16.4)	822 (16.8)	38 (10.4)	
Luminal B (Her2 Pos)	707 (13.4)	662 (13.5)	45 (12.4)	X^2=46.580; p<0.001
Her2 Positive	459 (8.7)	432 (8.8)	27 (7.4)	
Triple Negative Disease	643 (11.5)	618 (12.6)	25 (6.9)	
Luminal A/B (Her2 Neg)	1,504 (28.6)	1,394 (28.5)	110 (30.2)	

*Invasive tumours were included only

2.3±1.4 cm; p<0.001). Around half (50.5%) of the self detected tumours were larger than 2 cm, while that figure for screen detected tumours was only 16.1%. Screen detected cancers were also generally better differentiated (Grade 1) (34.6% vs. 18.4%; p<0.001), more often of the special histologic types (15.1% vs. 10.0%; p<0.001), and had less often high Ki-67 expression (35.9% vs. 58.6%; p<0.001) than self detected cancers. Screen detected cancers also were more often estrogen receptor (ER) positive (83.4% vs. 75.9%; p<0.001) or progesterone receptor (PR) positive (69.4% vs. 63.8%; p=0.033) than self detected cancers. However, amplification of HER2 oncogene was not significantly different between the two groups of patients. Screen detected cancers were less often expressed as triple negative disease (ER-PR-HER2-) (6.9% vs. 12.6%; p<0.001) than self detected cancers.

Almost all patients (98.4%) underwent surgery. Lower rate of mastectomy was observed in screen detected patients than self detected patients (46.3% vs. 67.4%; p<0.001). A higher proportion of screen detected patients did not need nodal surgery (18.3% vs. 3.7%; p<0.001), and, for those who had nodal surgery, more of the screen detected patients underwent sentinel node biopsy only (54.1% vs. 29.0%; p<0.001). Nearly a three-fold increase in the usage of chemotherapy was observed in self detected cases (66.1% vs. 25.0%; p<0.001). Uses of radiotherapy, endocrine therapy and targeted therapy were also significantly higher in self detected patients than in screen detected patients (Table 3).

Table 3 Treatment received by self and screen detected patients aged ≧ 40

	Total, N (%) (N=7,013)	Self detected, N (%) (N=6,286)	Screen detected, N (%) (N=727)	Sig.
Surgery	6,896 (98.4)	6,176 (98.3)	720 (99.2)	NS
Surgery type				
Breast conserving surgery	2,402 (34.9)	2,015 (32.6)	387 (53.8)	X^2=126.460; p<0.001
Mastectomy	4,490 (65.1)	4,157 (67.4)	333 (46.3)	
Lymph node surgery				
Sentinel node biopsy	2,168 (31.6)	1,780 (29.0)	388 (54.1)	X^2=544.859; p<0.001
Axillary dissection+/-sentinel node biopsy	4,325 (63.1)	4,127 (67.2)	198 (27.6)	
No axillary sugery	361 (5.3)	230 (3.7)	131 (18.3)	
Chemotherapy	4,284 (61.8)	4,105 (66.1)	179 (25.0)	X^2=460.449; p<0.001
Radiotherapy	4,340 (63.1)	3,935 (63.8)	405 (57.3)	X^2=11.558; p=0.001
Endocrine therapy	4,689 (67.9)	4,319 (69.8)	370 (52.0)	X^2=92.096; p<0.001
Targeted therapy	518 (7.5)	489 (7.9)	29 (4.0)	X^2=13.874; p<0.001

Conclusion

Mammography screening is useful for the early detection of breast cancer. Although reduction of mortality by mammography screening needs to be further evaluated in the Hong Kong population, our data shows that reduction of aggressive treatment could be achieved by the early detection of breast cancer through screening. This also implies less expensive medical treatment and thus less burden on medical service.

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