We found no statistical effect on the relative risk of type of psychopathology, years of follow-up, age after first admission and alcohol abuse.

Conclusion: We found no support for the hypothesis of an increased risk of breast cancer among women with admission into psychiatric department with affective or neurotic disorder.

98 ORAL

Breast cancer and risk factors: A comparative study between a low and a high risk population

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Aims: To study breast cancer risk factors in two epidemiologically different populations caracterised by low and high incidence rates for breast cancer. To define minor and major risk factors and determinants. To evaluate futur epidemiological changes and options in public health interventions in breast cancer.

Materiel and Method: A comparative epidemiologic study was performed between Geneva, Switzerland and Shanghai, China. We included 2000 women, 1000 in each group. We study minor risk factors, i.e reproductive (menarche, menopause, age at first pregnancy), hormonal (oral contraception, hormonal substitution), live style (diet) factors; major risk factors (family or personal history of benign breast diseases or cancer) were also studied.

Results: Mean age is 50 in each group, respectively Geneva and Shanghai. Results about minor risk factors demonstrated an early menarche and late menopause (before 40 y.o.) in Geneva (13 vs 15 y.o; 22.9 vs 31.6%). Nulliparity and first pregnancy age (before 25 y.o.) is most frequent in Geneva (14.2 vs 6.7%; 31.4 vs 53.7%) Contraceptive and hormonal substitution are unusual in Shanghai (10 vs 1.2%; 11 vs 0%). Fatty diet and obesity is more frequent in Geneva (5 vs 0.3%). Personal and family history of breast cancer is very high in Geneva (2.2 vs 2.2%; 10.3 vs 0.9%)

Conclusion: These results confirm well known minor and major breast cancer risk factors. Diversity of involved risk factors and future epidemiological changes-specially in diet and hormonal use-make difficult futures predictions and public health interventions.

99 ORAL

Worse survival of patients with endometrial cancer following tamoxifen treatment for breast cancer: A study with 309 second tumors

L. Bergman[1], M.L.R. Beelen[1], M.P.W. Gallee[1], J. Benraadt[2], F.E. van Leeuwen[1]. *[1]The Netherlands Cancer Institute; [2]Comprehensive Cancer Center Amsterdam, Netherlands*

Purpose: We conducted a nationwide case-control study to assess the effect of tamoxifen on the risk and prognosis of endometrial cancer.

Methods: Through the population-based Netherlands Cancer Registry and two older, hospital-based registries we identified 310 cases with endometrial cancer after breast cancer and 861 matched controls with breast cancer in whom endometrial cancer had not developed. Detailed information on breast cancer treatment, risk factors and prognostic factors of endometrial cancer was obtained through a review of the medical records.

Results: Tamoxifen had been used by 36% of the cases and 29% of controls (RR 1.5 [95% CI 1.1–1.9]). The median time between diagnosis of breast cancer and endometrial cancer was 40 (4–235) months. There was a strong increase in risk of endometrial cancer with longer duration of tamoxifen use ($p < .001$): RR 2.0 (95% CI 1.2–3.2) for 2–5 years of use and 6.9 (95% CI 2.4–19.4) for ≥ 5 years of use compared to never use. FIGO stage 3 and 4 endometrial cancers occurred more frequently in long-term (≥ 2 yrs) tamoxifen users than in nonusers (17.4% vs 5.4%, $p = .006$). Eleven of 110 tamoxifen-treated women and 10 of 200 non-users died of endometrial cancer after median follow-up of 30 months. Three-year actuarial endometrial cancer-specific survival was significantly worse for long-term tamoxifen users (≥ 2 yrs) than for non-users (80% vs. 94%; $p = .002$). Cox proportional hazard analyses showed that the worse survival of long-term users was related to their less favourable FIGO stage. Additional immunohistochemical analyses of the tissue blocks of all endometrial cancers are currently being performed to evaluate whether advanced FIGO stage after long-term tamoxifen use reflects specific molecular genetic alterations.

100 POSTER

Serum and nipple aspirate levels of vitamin A and vitamin E and lack of an association with breast cancer

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Purpose: Epidemiological evidence suggests that diets low in antioxidants could lead to an increased risk of breast cancer. Vitamin A and E are two antioxidants that have been shown experimentally to inhibit the development of mammary tumours. Our aim was to determine the levels of vitamin A and E in serum and nipple aspirates of women attending the South Manchester Breast Clinic and the association with breast cancer.

Methods: One-hundred and six women were studied, with a median age of 44 years (range 16–82). Forty-four patients had breast cancer and 62 had either benign or no detectable breast disease. Serum and/or nipple aspirate samples were collected from each patient and paired nipple aspirate and serum data were available for 35 women. Vitamin levels were measured by HPLC.

Results:

Median levels (mg/ml)	Serum (benign patients)	Serum (cancer patients)	Nipple aspirate (benign breast)	Nipple aspirate (malignant breast)	Serum (non smokers)	Serum (smokers)
Vit A	0.5	0.50	0.29	0.25	0.50	0.50
(IQ range)	*(0.40–0.62)*	*(0.40–0.57)*	*(0.13–0.44)*	*(0.17–0.40)*	*(0.41–0.59)*	*(0.34–0.57)*
Vit E	11.3	12.35	12.20	11.10	11.70	10.8*
(IQ range)	*(9.3–12.6)*	*(9.–15.08)*	*(6.40–21.4)*	*(5.50–16.40)*	*(9.8–14.3)*	*(8.75–12.45)*

* $p < 0.05$

Serum vitamin A and E rose significantly with age and with the menopause (pœ 0.01) Nipple aspirate antioxidant levels were unaffected by smoking ($p > 0.2$) and breast cancer had no affect upon nipple aspirate or serum antioxidant levels.

Conclusion: We have found no evidence of an association between breast cancer and level of Vitamin A and E.

101 POSTER

Individual breast cancer risk in premenopausal women

R.M. de Souza[1], A.R. Lazzaron[1], R. Defferrari[1], A.A. Borba[2], L. Scherer[2], A.L. Frasson[3]. *[1]Faculdade de Medicina, UFRGS; [2]Centro de Ecografia e Radiologia, Hospital São Rafael; [3]Faculdade de Medicina, PUC/RS, Brazil*

Purpose: There is an increasing demand for prediction of individual women's risk for breast cancer. We delineated an equation to estimate premenopausal women's breast cancer risk for a period of one year, based on the absolute risk and the excess risk from identified risk factors.

Methods: We tested this method in 1681 women who underwent mammography in a private clinic. After calculating the individual risk for each of the patients, we divided them in quartiles. We also divided the population in arbitrary risk levels: low, intermediate, and high. Then, we compared the number of cases expected with the number of cases diagnosed.

Results: The breast cancer incidence was higher in the highest quartile of risk (3.5%) as compared to the lowest (1.0%) ($P = 0.02$). The breast cancer incidence was also higher in arbitrary high risk level group (5.1%) as compared to the low risk (1.5%) ($P = 0.01$). The relative risk of presenting the disease was 3.25 in the highest quartile of risk compared to the lowest ($P < 0.05$), and was 3.26 in the high risk level compared to the low risk ($P = 0.01$). There was a significant correlation in the expected/observed ratio between subgroups ($r = 0.99$; $P < 0.001$).

Conclusion: This new method might be useful in the evaluation of individual breast cancer risk in premenopausal women.

102 POSTER

Individual breast cancer risk assessement in postmenopausal women

R.M. de Souza[1], A.R. Lazzaron[1], R. Defferrari[1], A.A. Borba[2], L. Scherer[2], A.L. Frasson[3]. *[1]Faculdade de Medicina, UFRGS; [2]Centro de Ecografia e Radiologia, Hospital São Rafael; [3]Faculdade de Medicina, PUC/RS, Brazil*

Purpose: There is an increasing demand for prediction of individual women's risk for breast cancer. We delineated an equation to estimate

postmenopausal women's breast cancer risk for a period of one year, based on the absolute risk and the excess risk from identified risk factors.

Methods: We tested this method in 988 women who underwent mammography in a private clinic. After calculating the individual risk for each of the patients, we divided them in quartiles. We also divided the population in arbitrary risk levels: low, intermediate, and high. Then, we compared the number of cases expected with the number of cases diagnosed.

Results: The breast cancer incidence was higher in the highest quartile of risk (7.6%) as compared to the lowest (0.008%) ($P = 0.0003$). The relative risk of presenting the disease was 9.38 in the highest quartile of risk compared to the lowest ($P < 0.001$), and was 7.63 in the high risk level compared to the low risk ($P < 0.001$). There was a significant correlation in the expected/observed ratio between subgroups ($r = 0.96$; $P < 0.001$).

Conclusion: This new method might be useful in the evaluation of individual breast cancer risk in postmenopausal women.

103 POSTER

First-degree family history and breast cancer

R.M. de Souza[1], A.R. Lazzaron[1], R. Defferrari[1], A.A. Borba[2], L. Scherer[2], A.L. Frasson[3]. *[1]Faculdade de Medicina, UFRGS; [2]Centro de Ecografia e Radiologia, Hospital São Rafael; [3]Faculdade de Medicina, PUC/RS, Brazil*

Purpose: Women whose mothers or sisters had breast cancer are 3–4 times more likely to develop the disease. However, only 10% of these patients have a positive family history. We evaluated the association between breast cancer first-degree family history and the risk to develop the disease.

Methods: Incident cases case-control study. We pared 74 consecutive incident breast cancer cases (histologicaly confirmed) and 222 controls for risk factors others than first-degree family history, selected among women who underwent mammography in a private clinic between January 1994 and July 1997. Before the mammography, all patients were interviewed about menarche, menopause, age at first pregnancy, parity, oral contraceptives or hormonal replacement therapy, and first and second-degree family history of breast cancer.

Results: There was no significant difference between cases and controls regarding all risk factors evaluated, besides first-degree family history. Patients with breast cancer, compared to controls, were more likely to have first-degree relatives with the disease (OR = 4.36; 95% CI, 1.30–14.94; $P = 0.008$).

Conclusion: Breast cancer is significantly associated with first-degree family history of the disease.

104 POSTER

Second-degree family history and breast cancer

R.M. de Souza[1], A.R. Lazzaron[1], R. Defferrari[1], A.A. Borba[2], L. Scherer[2], A.L. Frasson[3]. *[1]Faculdade de Medicina, UFRGS; [2]Centro de Ecografia e Radiologia, Hospital São Rafael; [3]Faculdade de Medicina, PUC/RS, Brazil*

Purpose: to evaluate the association between breast cancer second-degree family history and the risk to develop the disease.

Methods: Incident cases case-control study. Sixty six consecutive incident breast cancer cases and 198 controls were select among women who attended mammography in a private clinic between January 1994 and July 1997. Cases and controls were pared for age, aget at menarche, at first live birth, at menopause, parity, oral contraceptives or hormonal replacement therapy use.

Results: There was no significant difference between cases and controls regarding all risk factors evaluated, besides second-degree family history. Patients with breast cancer were more likely to have second-degree relatives with breast cancer when compared to controls (OR = 2.77; 95% CI, 1.03–7.38; $P = 0.039$).

Conclusion: Breast cancer is significantly associated with second-degree family history of the disease.

105 POSTER

A rigorus follow-up study is necessary to precisely estimate the effect of adjuvant therapy in early breast cancer

Y. Nomura, T. Takayama, Y. Takenaka. *Department of Breast Surgery, National Kyushu Cancer Center, Japan*

Purpose: A follow-up study of randomized controlled trials for adjuvant therapy in breast cancer has become more and more hard to perform, although rigorous follow-up is necessary for lessoning the type II erros in the studies.

Methods: In a randomized clinical trial comparing endocrine therapy (tamoxifen (TAM) ± oophorectomy), chemotherapy (CHEM; mitomycin C + oral cyclophosphamide), and chemoendocrine therapy (CHEM + TAM), for early breast cancer (UICC, I, II, IIIA) stratified by ER and menopausal status. In 1579 patients, 3 follow-up methods were evaluated for outcomes of the 3 treatments in terms of recurrence-free (RFS) and overall survival ((OS) by means of the logrank test in the Kaplan-Meier curves and the Cox proportional hazard model: 1) X: periodical informations in the outpatient – clinic after operation, 2) Y: telephone and letter inquiry in addition to X, 3) Z: in addition to Y, inquiry of family register (Koseki), of resident cards, reference to other hospitals.

Results: 305 recurrences and 331 deaths were found by the method of Z. A 83% and 93% of deaths compared with Z were noted by X and Y, respectively. The analysis with X method did not show a significant difference in the adjuvant treatments. The Cox model showed that a significant difference in OS was noted by means of Z method alone.

Conclusions: These results suggest that a rigorous follow-up is necessary to avoid the type II erros in the breast cancer adjuvant therapy study.

Wednesday, 30 September 1998 16:00-18:00

PARALLEL SESSION

Reconstructive surgery

110 INVITED

Breast reconstruction by TRAM flap: Technical options

P.L. Santi. *University of Genova, Division of Plastic and Reconstructive Surgery, National Institute for Cancer Research, Switzerland*

The transverse rectus abdominis musculocutaneous (TRAM) flap has evolved as a popular source for routine postmastectomy breast reconstruction using autogenous tissue. As originally described, the TRAM flap consisted of the rectus abdominis muscle and lower abdominal skin perfused by the deep superior epigastric vessel via the periumbilical myocutaneous perforators. The principles that have been developed along with the evolution and modification of this flap have promoted a more reliable and augmented blood supply to the flap, with an attempt to maintain abdominal-wall integrity. Indeed, there are now a variety of options available to the surgeon that may suit most clinical situations ; for example, preserving a lateral strip of the rectus abdominis (as in the "selective" technique) reduces the risks of significantly hampering the postoperative integrity of the abdominal wall.

Although using the superior-based single-pedicle TRAM flap is the preferred method, potential problems can occur with the poorly vascularized contralateral portion of the flap (zone IV), including fat necrosis and skin loss. Occasionally, the whole random portion of the flap may be compromised, thus to require excision of a significant segment of poorly vascularized tissue. Efforts to avoid these complications have produced trends toward the preferred utilization, in selected patients, of the bipedicled TRAM flap. Criteria for using both pedicles when transposing a TRAM flap include large soft-tissue requirements, prior abdominal surgery compromising the blood supply to portions of the anterior abdominal wall, and selected patients with suspected microvascular pathology, such as smokers. The disadvantages include a slightly longer operative time and increased risks of donor-site morbidity.

Anatomical studies have demonstrated that the dominant blood supply of the lower abdominal skin comes actually from the inferior system rather than the superior system, so in theory an improvement in blood supply could be realized if the flap were based on the deep inferior epigastric vessels. The free TRAM flap exploits this principle and has evolved as a popular and reliable choice in breast reconstruction. The "supercharged" TRAM flap has been introduced as a method where the single superiorly based pedicle can be augmented with additional flow by means of the microvascular anastomasis of vessels on the opposite random portion of the flap to recipient vessels in the axillae. In this regard, supercharging by means of the superficial inferior epigastric artery or the deep inferior epigastric artery in an inferiorly based rectus muscle on the opposite side has been described. The preferred recipient vessels for the free TRAM flap as well as the supercharged flap include the axillary branches and the subscapular artery and its division ; the internal mammary system has