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***Malignancies in First-Degree Relatives  
of 67 Women with Breast Cancer (Baroda, India)***

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Dr. Jayashree Mehta, Professor at the Department of Surgery of the Medical College of Baroda, India, collected information on cases of cancer among first-degree relatives by interviewing 67 women with breast cancer (probands) through the UICC Family History Questionnaire (1). Breast cancer in the probands were diagnosed between January 1997 and April 1999.

The presentation will be devoted to show the results of a preliminary descriptive analysis of the data gathered by Prof. Mehta. It was not possible to estimate cancer risk among first-degree relatives because I

was not be able to perform neither a case-control study (the dataset contained only information on cases) nor a cohort study. In fact, neither a definite control cohort of relatives was assembled nor I was able to estimate expected number of cancers among relatives by using population-based incidence data (according to the last volume of *Cancer Incidence in Five Continents* published by the International Agency for Research on Cancer [IARC], Baroda is not covered by a population-based cancer registry).

## **PROBANDS**

In 96% of filled-in questionnaires the histological type of cancer in probands was reported (Table 1). In no questionnaire the topographical subcategories of breast were described.

The probands' full date of birth was reported in each questionnaire as well as the date of diagnosis. The mean age at diagnosis by histological type is shown in Table 1.

No previous cancers were diagnosed among probands.

66% of probands was under the age of 45 years. In this subgroup, 84% of cancers had microscopical features of infiltrating duct carcinoma (Table 2). The same percentage was seen also among the 23 probands aged 45 years or older (Table 3).

## **FIRST-DEGREE RELATIVES**

By interviewing the probands, Prof. Mehta collected information on 429 first-degree relatives (Table 4).

The full date of birth was reported in 413 out of 429 relatives (96%), while year of birth only was collected from 16 relatives.

Invasive cancers were diagnosed in 21 relatives from 21 families: 52% of cancers were detected in mothers, 24% in fathers, 19% in sisters and 5% among brothers (Table 4).

The age at diagnosis was reported for all relatives with cancer and its mean value was 61 years (Table 4). Moreover, the age at the end of follow-up was collected for all relatives without a diagnosis of cancer.

Table 5 describes malignancies diagnosed in relatives by primary site. Breast cancer accounted for 71% of cancers in the relatives as a whole and for 100% of cancers among mothers and sisters.

The distribution of cancers by primary site among relatives of probands aged under 45 years is shown in Table 6. 76% of all cancers and 67% of breast cancers were diagnosed among their relatives. On the other hand, only breast cancers were diagnosed in the relatives of probands aged 45 years or older, *i.e.* in 3 mothers and 2 sisters.

Among mothers and sisters of probands under the age of 45, the mean age at diagnosis of breast cancer was 62 and 42 years, respectively (Table 7). On the other hand, among mothers and sisters of probands aged 45 years or older the mean age was 80 and 63, respectively (Table 8). The *t* test was carried out to test the significance of the difference between the mean age at diagnosis of the 10 female relatives with breast cancer of probands under 45 and the mean age of the 5 female relatives with breast cancer of older probands. The *t* test showed a statistically significant difference at the 5% level ( $P = 0.04$ ).

## REFERENCE

1. Mussio P, Weber W, Brunetti D, Stemmermann GN, Torhorst J. Taking a family history in cancer patients with a simple questionnaire. *Anticancer Research* **18**: 2811-14, 1998.

**Age at diagnosis  
(years)**

<b><i>Histological type</i></b>	<b><i>N. of probands</i></b>	<b>Age at diagnosis (years)</b>		
		<b><i>Mean</i></b>	<b><i>SD</i></b>	<b><i>Min-Max</i></b>
<b>Infiltrating duct ca.</b>	<b>56</b>	<b>42</b>	<b>13</b>	<b>19-79</b>
<b>Lobular ca.</b>	<b>5</b>	<b>37</b>	<b>6</b>	<b>33-48</b>
<b>Intraductal ca.</b>	<b>3</b>	<b>41</b>	<b>9</b>	<b>31-49</b>
<b>Unknown</b>	<b>3</b>	<b>49</b>	<b>14</b>	<b>36-64</b>
<b>ALL TYPES</b>	<b>67</b>	<b>42</b>	<b>12</b>	<b>19-79</b>

**Probands under the age of 45**

<i>Histological type</i>	<i>N. of probands</i>
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<b>Infiltrating duct ca.</b>	<b>37</b>
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<b>Lobular ca.</b>	<b>4</b>
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<b>Intraductal ca.</b>	<b>2</b>
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<b>Unknown</b>	<b>1</b>
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<b>ALL TYPES</b>	<b>44</b>
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**Probands aged 45 years or older**

<i>Histological type</i>	<i>N. of probands</i>
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<b>Infiltrating duct ca.</b>	<b>19</b>
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<b>Unknown</b>	<b>2</b>
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<b>Lobular ca.</b>	<b>1</b>
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<b>Intraductal ca.</b>	<b>1</b>
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<b>ALL TYPES</b>	<b>23</b>
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		<i>Relatives with cancer</i>		<i>Age at diagnosis (years)</i>			
<i>Relationship to proband</i>	<i>N. of relatives</i>	<i>Number observed</i>	<i>Mean</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	
Fathers	67	5	60	6	50	67	
Mothers	67	11	67	10	54	92	
Brothers	51	1	38*	-	-	-	
Sisters	83	4	52	17	38	78	
Sons	83	0	-	-	-	-	
Daughters	78	0	-	-	-	-	
<b>ALL RELATIVES</b>	<b>429</b>	<b>21</b>	<b>61</b>	<b>13</b>	<b>38</b>	<b>92</b>	

\* Individual age.

*First-degree relatives with cancer*

<i>Primary site</i>	<i>All relatives</i>	<i>Fathers</i>	<i>Mothers</i>	<i>Brothers</i>	<i>Sisters</i>
Breast	15	0	11	0	4
Colon	2	2	0	0	0
Prostate	2	1	0	1	0
Penis	1	1	0	0	0
Thyroid	1	1	0	0	0
<b>ALL SITES</b>	<b>21</b>	<b>5</b>	<b>11</b>	<b>1</b>	<b>4</b>

*First-degree relatives with cancer of probands  
aged under 45 years*

<i>Primary site</i>	<i>All relatives</i>	<i>Fathers</i>	<i>Mothers</i>	<i>Brothers</i>	<i>Sisters</i>
Breast	10	0	8	0	2
Colon	2	2	0	0	0
Prostate	2	1	0	1	0
Penis	1	1	0	0	0
Thyroid	1	1	0	0	0
ALL SITES	16	5	8	1	2

## Probands under the age of 45

### Relatives with breast cancer

#### Age at diagnosis (years)

<i>Relationship to proband</i>	<i>N. of relatives</i>	<i>Number observed</i>	<i>Mean</i>	<i>SD</i>	<i>Min-Max</i>
<b>Mothers</b>	44	8	62	4	54-69
<b>Sisters</b>	54	2	42	4	38-47

**Proband's aged 45 years or older**

*Relatives with breast cancer*

*Age at diagnosis (years)*

<i>Relationship to proband</i>	<i>N. of relatives</i>	<i>Number observed</i>	<i>Mean</i>	<i>SD</i>	<i>Min-Max</i>
<b>Mothers</b>	23	3	80	8	73-92
<b>Sisters</b>	29	2	63	14	49-78