



**EEBA 2010**  
XXII ANNUAL MEETING



22 | 23 January 2010  
SITGES | BARCELONA | SPAIN

# DONOR SELECTION QUESTIONS

## Corneal Transplantations from Donors with Cancer

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## INCIDENCE OF OCULAR METASTASES FROM SYSTEMIC CANCER

|  | GLOBAL             |                                    | SOLID CANCER       |                                    | MALIGNANT<br>HEMATOLOGICAL<br>DISEASE [& LEUKEMIA] |   |
|--|--------------------|------------------------------------|--------------------|------------------------------------|--|---|
|  | Subjects<br>/ Eyes | Ocular<br>MicroMTS<br>(% of total) | Subjects<br>/ Eyes | Ocular<br>MicroMTS<br>(% of total) | Subjects<br>/ Eyes                                 | Ocular<br>MicroMTS<br>(% of total)                    |
| Allen &<br>Straatsma<br>1959-1960<br>[Ref. 9]  | -                  | -                                  | -                  | -                                  | 76<br>[L = 50]                                     | 38 (50%)<br>[33 (66%)]                                |
| Bloch &<br>Gartner<br>1960s<br>[Ref. 10]       | -                  | -                                  | 230                | 28 (12%)                           | -  | -   |
| Eliassi-Rad et<br>al<br>1976-1980<br>[Ref. 11] | 741 <sup>a</sup>   | 93 (12.6%)                         | 535 <sup>b</sup>   | 30 (5.5%)                          | 206<br>[L = 115]                                   | 63 (30.6%)<br>[L = 40 (34.8%)]                        |
| Nelson et al.<br>1973-1983<br>[Ref. 12]        | 716 <sup>c</sup>   | 52 (7.3%)                          | 539 <sup>d</sup>   | 15 (2.8%)                          | 177<br>[L = 117]                                   | 37 (20.9%)<br>[L = 33 (28%)]                          |
| Sant Pau Eye<br>Bank,<br>1999-2003             | 204/<br>408        | 2 (1.0%)/<br>2 (0.5%)              | 177/<br>354        | 1 (0.6%)/<br>1 (0.3%)              | 27/<br>54<br>[L = 12/<br>24]                       | 1 (3.7%) /<br>1 (1.8%)<br>[L = 1 (8.4%)/<br>1 (4.2%)] |



## CORNEAL TRANSPLANTATIONS FROM DONORS WITH CANCER

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### Literature Review, cancer transmission by cornea:

1. Retinoblastoma [Hata, 1939]
2. Adenocarcinoma (bowel?) [McGeorge, 2002]
3. Small cell carcinoma [Florén, 2003]



## CORNEAL TRANSPLANTATIONS FROM DONORS WITH CANCER

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EEBA & EBAA  
accept  
cornea donors dying from active  
cancer,



## CORNEAL TRANSPLANTATIONS FROM DONORS WITH CANCER

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### Excluded:

- . Solid tumors:
  - . Retinoblastoma,
  - . Anterior segment tumor &
  - . **Ocular adenocarcinoma (EBAA)**



## CORNEAL TRANSPLANTATIONS FROM DONORS WITH CANCER

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### Excluded:

- . Hematological cancers:

- . EEBA:

- Leukemia, Lymphoma & Mieloma

- . EBAA:

- Leukemia & Active Lymphoma



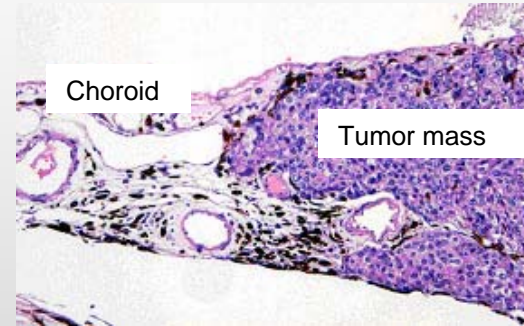
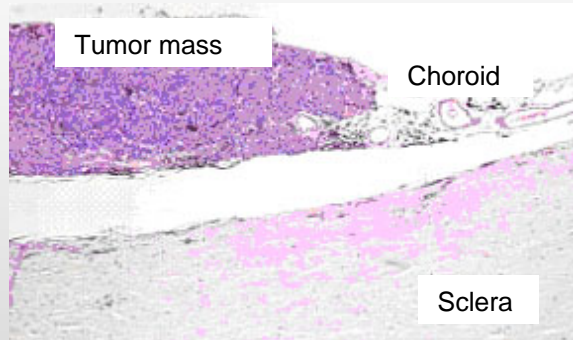
## CORNEAL TRANSPLANTATIONS FROM DONORS WITH CANCER

Sant Pau Eye Bank,  
1999-2003

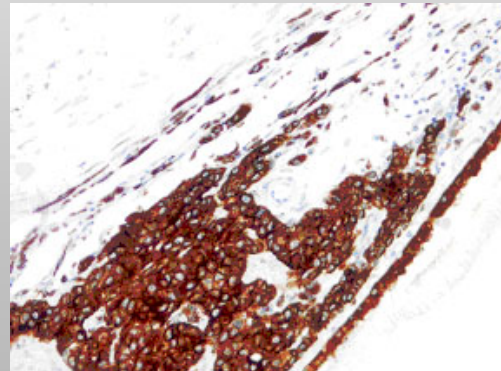
|  | Donors (%)                     | Corneas (%)                |
|--|--------------------------------|----------------------------|
| <b>Solid cancer:</b>                         | <b>177 (86.8)</b>              | <b>305 (93.9)</b>          |
| <i>Lung</i>                                  | 38 (18.8)                      | 65 (20.0)                  |
| <i>Colon &amp; Rectum</i>                    | 26 (13.2)                      | 45 (13.8)                  |
| <i>Breast</i>                                | 23 (11.7)                      | 39 (12.0)                  |
| <i>Esophagus &amp; Stomach</i>               | 15 (6.6)                       | 32 (9.8)                   |
| <i>Prostate</i>                              | 10 (5.1)                       | 20 (6.1)                   |
| <i>Ovary &amp; Uterus</i>                    | 10 (5.1)                       | 20 (6.1)                   |
| <i>Kidney &amp; Bladder</i>                  | 10 (5.1)                       | 19 (5.9)                   |
| <i>Pancreas &amp; Liver</i>                  | 11 (5.6)                       | 19 (5.9)                   |
| <i>Larynx</i>                                | 8 (3.6)                        | 16 (4.9)                   |
| <i>Brain</i>                                 | 8 (3.6)                        | 9 (2.8)                    |
| <i>Others</i>                                | 8 (3.6)                        | 5 (1.5)                    |
| <i>Unknown origin</i>                        | 10 (5.1)                       | 16 (4.9)                   |
| <b>Malignant hematological disease:</b>      | <b>27 (13.2)</b>               | <b>20 (6.1)</b>            |
| <b><i>Leukemia</i></b>                       | <b>12 (6.1)</b>                | <b>7 (2.1)</b>             |
| <i>Acute Lymphocitic Leukemia</i>            | 2 (1.0)                        | 1 (0.3)                    |
| <i>Acute Myeloid Leukemia</i>                | 5 (2.4)                        | 1 (0.3)                    |
| <i>Chronic Myeloid Leukemia</i>              | 5 (2.4)                        | 5 (1.5)                    |
| <b><i>Lymphoma</i></b>                       | <b>8 (3.9)</b>                 | <b>6 (1.8)</b>             |
| <i>Hodgkin</i>                               | 3 (1.5)                        | 3 (0.9)                    |
| <i>Non-Hodgkin</i>                           | 5 (2.4)                        | 3 (0.9)                    |
| <b><i>Myeloma</i></b>                        | <b>4 (2.0)</b>                 | <b>4 (1.2)</b>             |
| <b><i>Myeloproliferative syndrome</i></b>    | <b>3 (1.5)</b>                 | <b>3 (0.9)</b>             |
| <b><i>Refractory Anemia &amp; Blasts</i></b> | <b>3 (1.5)</b>                 | <b>3 (0.9)</b>             |
| <b>Total</b>                                 | <b>204 (100)</b><br>(408 eyes) | <b>325</b><br><b>(100)</b> |

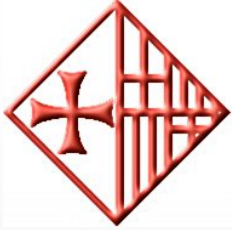


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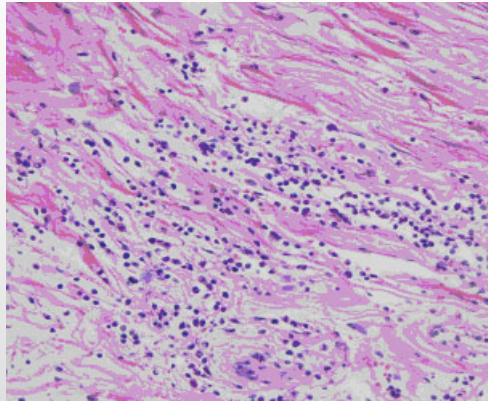


## Ocular metastasis of breast carcinoma

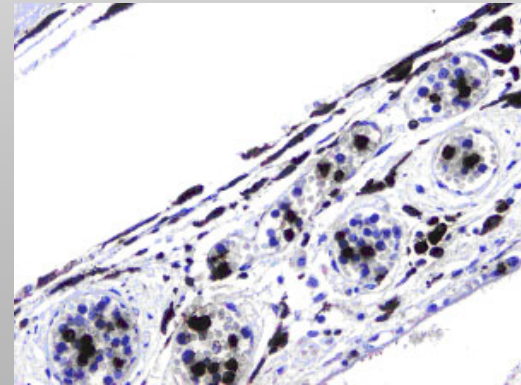




## CORNEAL TRANSPLANTATIONS FROM DONORS WITH CANCER



# Chronic Myeloid Leukemia





## CORNEAL TRANSPLANTATIONS FROM DONORS WITH CANCER

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In conclusion (I),

ocular metastatic involvement in patients dying from active solid or hematological cancer is currently very low, and



## CORNEAL TRANSPLANTATIONS FROM DONORS WITH CANCER

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In conclusion (II),

transmission of malignancy is highly unlikely when there is no tumor infiltration of the eye.



## CORNEAL TRANSPLANTATIONS FROM DONORS WITH CANCER

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In conclusion (III),

Corneal donors with active cancer can represent a high percentage of corneas viable for transplantation.



## CORNEAL TRANSPLANTATIONS FROM DONORS WITH CANCER

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### Recommendations with cornea donors who died from cancer:

- 1) eyes which present macroscopic tumor masses should be rejected;
- 2) the cornea and anterior chamber of the eye should be carefully evaluated by slit lamp to discard tumor infiltration; and
- 3) histopathological study of the eye should be performed prior to corneal transplantation and cornea should be rejected in cases of tumor cellular infiltration.



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