The Belgian Virtual Tumourbank Project:

Data quality control on primary breast tumour tissue samples

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Introduction

The Belgian Virtual Tumourbank Project (11 local biobank partners)
Introduction

From local biobank to catalogue

Partner biobanks

AIM

- Centralize the data of residual human tumour samples in a database
- Make a coded version of the database accessible for research
Methods

Localisation of primary tumours (n=60,942)

- Breast 16,514
- Female genital organs 2,328
- Endocrine organs 2,955
- Kidney 3,038
- Lymph nodes 3,446
- Lung 3,956
- Other digestive organs 4,462
- Others 8,894
- CNS 5,901
- Soft tissue 4,377
- Colorectal 5,071

- 72,787 registrations
- BVT Catalogue (BVTc)
  - Primary breast tumours (C50)
  - Sample year 2014
  - Malignant (/3)
- 2,660 registrations
  - Random selection of 20 patients per biobank
- 197 patients

Belgian Cancer Registry

www.kankerregister.org  l  www.registreducancer.org
Methods

Overlapping information between BVT and BCR database

- SSIN
- Gender
- Birth date
- Sample date
- Biopsy number
- Sample type
- Sample localisation
- Morphology (histology and behaviour)
- Differentiation grade
- pT

Patient variables

Technical variables

Oncological variables
# Results

## General information

<table>
<thead>
<tr>
<th>Variables</th>
<th>n (%)</th>
<th>mean ± S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>197 (100)</td>
<td>62 ± 13,50</td>
</tr>
<tr>
<td>Gender (female/male)</td>
<td>197 (96,4 / 3,6)</td>
<td>-</td>
</tr>
<tr>
<td>Conservation mode (Paraffin/ -80°C)</td>
<td>197 (22,8 / 77,2)</td>
<td>-</td>
</tr>
<tr>
<td>Conservation delay (≤30 min/ &gt; 30 min / unknown)</td>
<td>197 (15,7 / 31,5 / 53,3)</td>
<td>-</td>
</tr>
<tr>
<td>Available material (only tumour tissue / other material*)</td>
<td>197 (40,6 / 59,4)</td>
<td>-</td>
</tr>
<tr>
<td>*corresponding normal tissue</td>
<td>87,2</td>
<td>-</td>
</tr>
<tr>
<td>*blood</td>
<td>15,4</td>
<td>-</td>
</tr>
<tr>
<td>*serum</td>
<td>12,0</td>
<td>-</td>
</tr>
<tr>
<td>*plasma</td>
<td>12,0</td>
<td>-</td>
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</tbody>
</table>

*Belgian Cancer Registry*
## Results

### Validity assessment

<table>
<thead>
<tr>
<th>Variables</th>
<th>Registered in BVT n (%)</th>
<th>Corrections needed in BVT n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSIN</td>
<td>197 (100)</td>
<td>0</td>
</tr>
<tr>
<td>Birth date</td>
<td>197 (100)</td>
<td>0</td>
</tr>
<tr>
<td>Gender</td>
<td>197 (100)</td>
<td>0</td>
</tr>
<tr>
<td>Sample date</td>
<td>197 (100)</td>
<td>1 (0.5)</td>
</tr>
<tr>
<td>Biopsy number</td>
<td>197 (100)</td>
<td>2 (1.0)</td>
</tr>
<tr>
<td>Sample type</td>
<td>197 (100)</td>
<td>0</td>
</tr>
<tr>
<td>Sample localisation</td>
<td>197 (100)</td>
<td>1 (0.5)</td>
</tr>
<tr>
<td>Laterality</td>
<td>168 (85.3)</td>
<td>3 (1.8)</td>
</tr>
<tr>
<td>Histology</td>
<td>197 (100)</td>
<td>10 (5.1)</td>
</tr>
<tr>
<td>Behaviour</td>
<td>197 (100)</td>
<td>1 (0.5)</td>
</tr>
<tr>
<td>Differentiation grade</td>
<td>136 (69.0)</td>
<td>0</td>
</tr>
<tr>
<td>pT</td>
<td>166 (84.3)</td>
<td>1 (0.6)</td>
</tr>
</tbody>
</table>

### Additional information

<table>
<thead>
<tr>
<th>pTNM prefixes to be added in the BVT n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recurrent tumours (rpTNM)</td>
</tr>
<tr>
<td>Tumour resection after neoadjuvant therapy (ypTNM)</td>
</tr>
</tbody>
</table>

BVT-data of 33 (16.8%) tumours contained 1 (n=30) or 2 (n=3) errors
Conclusions

- BVT database and Belgian Cancer Registry database (BCR) → Good quality of data

- Additional information on recurrent breast tumours and neoadjuvant therapy prior to resection of the breast tumour

- Indication of the relevance of a joint evaluation of biobank and cancer registry information to guarantee a high quality of associated data from biospecimens used in translational cancer research.
Acknowlegments

BVT Steering Committee

BVT Partner Biobanks

The Belgian Cancer Registry
Biobank Team

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