Circulating tumor cells analysed by scanning fluorescence microscopy in the XeNa trial

Thore Hillig¹, Ann-Britt Nygaard¹, Anne Sofie Brems-Eskildsen², Sven Tyge Langkjær³, György Söötormos°

1: Department of Clinical Biochemistry, Nordsjællands Hospital, Hilleroed, Denmark
2: Department of Oncology, Aarhus University Hospital, Denmark

Aim:
The hypothesis is that circulating tumor cells (CTC) can be used as an indicator for treatment response in metastatic breast cancer patients. CTC results from the first 41 patients in a monitoring study are presented.

Method:
Circulating tumor cells (CTC) are tested as a monitoring marker for treatment response in the clinical trial XeNa (metastatic or locally advanced HER2 negative breast cancer patients treated with a combined therapy with Xeloda and Navelbine Oral). We aim at including 120 breast cancer patients.

Blood samples will be analyzed for CTC by CytoTrack® before treatment and approximately 4 weeks after first treatment. Details regarding XeNa can be found at clinicaltrials.org. The endpoints of the study includes overall survival, treatment response according to RESIST criteria and treatment response according to CTC count.

Results:
In 20 consecutive patients nine showed positive for CTC before treatment. Follow up samples were CTC positive in five patients. Eleven showed no CTC prior to or following treatment.

<table>
<thead>
<tr>
<th>No. patients</th>
<th>Prior treatment</th>
<th>Follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. CTC</td>
<td>Median</td>
<td>Range</td>
</tr>
<tr>
<td>CTC unchanged</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>CTC decrease</td>
<td>12</td>
<td>17</td>
</tr>
</tbody>
</table>

Conclusion:
CTC analysis is regarded as a promising marker for monitoring treatment effect in metastatic breast cancer. The utility of CTC in monitoring treatment response and residual disease in the current study will become more clear when the study is completed and the patient outcome is known.

Acknowledgements:
We thank the XeNa study group for including blood samples for translational research. The CytoTrack® scanner was funded by Toyota-Fonden, Denmark. The study was funded by Research grant from Nordsjællands Hospital and Fornyelsesfonden.

Thore Hillig, e-mail: thore.hillig@regionh.dk