Bone Scan Index (BSI) –
A Nuclear Medicine Imaging Biomarker in Metastatic Prostate Cancer
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Bone Scan Index (BSI) – A Nuclear Medicine Imaging Biomarker in Metastatic Prostate Cancer

13:00 Introduction
   Prof. Lars Edenbrandt, Medical and Scientific Director, EXINI Diagnostics AB, Sweden.
13:10 What is BSI? - Its History and Technique
   Clinical Prof. Kenichi Nakajima, Department of Nuclear Medicine, Kanazawa University, Japan.
13:20 BSI as an Analytically Validated Imaging Modality
   Dr. Aseem Anand, Clinical Medicine Research, University of Lund, Sweden.
13:30 BSI in Clinical Routine
   Dr. Jens Kurth, Department of Nuclear Medicine, University of Rostock, Germany.
13:40 Clinical Impact of BSI
   Clinical Prof. Atsushi Mizokami, Department of Urology, Kanazawa University, Japan.
13:50 Clinical Utility of BSI in Sweden
   Prof. Anders Bjartell, Department of Urology, Skåne University Hospital, Sweden.
14:00 Round Up and Q&A
   Clinical Prof. Kenichi Nakajima, Prof. Lars Edenbrandt
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metastatic burden in bone

http://bonescanindex.org
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Biomarker – A characteristic that is objectively measured and evaluated as an indicator of
• normal biological processes,
• pathogenic processes, or
• pharmacologic responses to a therapeutic intervention.

The biomarker definitions working group of the National Institutes of Health
Clinical need – Imaging

Diagnostic imaging is an important part of the evaluation of patients with for example known or suspected cancer

- diagnosis
- prognosis
- treatment response
Clinical need – Biomarkers

Personalized medicine – tailoring medical treatment to the individual characteristics, needs and preferences of each patient

Biomarkers – useful tools in the decision-making process for personalized treatment
Clinical need – Imaging

The European Society of Cardiology recommends that patients with stable angina or silent ischemia with “proven large area of ischemia (>10%)” should receive revascularization.
Problem – Imaging Report

not “objectively measured”
Solution – Imaging Biomarker

Biomarker candidates extent, SDS, ....
Imaging – Opportunity
Imaging – Problem

How to incorporate information from imaging reports with other data.
Imaging – Solution an Imaging Biomarker

<table>
<thead>
<tr>
<th>Bone Scan Index</th>
<th>0.7</th>
<th>2.2</th>
<th>8.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 year survival probability</td>
<td>42%</td>
<td>31%</td>
<td>0%</td>
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5 year survival probability for all patients with bone metastases 24%
BSI –
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It is time to be quantitative in our image analysis of cancer patients

BSI is an *objectively measured* quantitative expression of skeletal tumour burden as seen on bone scans

= Imaging Biomarker
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