Educational software for technologists – When to add SPECT/CT imaging to planar bone scanning

A. Shafi¹, E. Jeremiasen¹, J. Richter²,
O. Thorsson¹, L. Edenbrandt²

¹Clinical Physiology and Nuclear Medicine, Skåne University Hospital, Malmö, Sweden
²EXINI Diagnostics AB, Lund, Sweden

Disclosure: Richter and Edenbrandt are shareholders in EXINI Diagnostics AB
Background

• SPECT/CT + whole body bone scan
  – differentiate malignant from benign lesions

• Work flow
  – perform the two exams while the patient remains on the table
Aim

• To develop an educational software for training and testing of all technologists performing bone scintigraphy
Method

1. Establish criteria for when SPECT/CT should be added to a planar bone scan
2. Select 40 training cases of whole-body bone scans illustrating the criteria
3. Select 10 test cases, similar to the training cases except that the desired decisions were not immediately available
1 Criteria for SPECT/CT

A) No SPECT / CT
- No new lesions when compared to a previous scan
- .......

B) Perform a SPECT / CT
- Focal lesions in the spine or pelvis
- .......
2 Training cases

Clinical information

Desired action – SPECT/CT or not
3 Test cases
Results

6 technologists /10 test cases = 60 decisions

<table>
<thead>
<tr>
<th>Technologists Decision</th>
<th>Desired SPECT/CT</th>
<th>Action No SPECT/CT</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECT/CT</td>
<td>30</td>
<td>8</td>
<td>38</td>
</tr>
<tr>
<td>No SPECT/CT</td>
<td>0</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>30</td>
<td>60</td>
</tr>
</tbody>
</table>

Technologists did not miss to perform SPECT/CT when needed
Conclusion

- Criteria, Training cases and Test cases have ensured that all technologists have the required knowledge to decide when to perform a SPECT/CT

- Improve effectiveness
Work in Progress

Step 4
- In clinical routine technologist make a decision before consulting the physician

- 100 cases

- If positive results in step 4, technologist will take decision SPECT/CT or not in the clinical routine
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- Criteria
- Educational software
- Comments and suggestions appreciated