Introduction and Objectives

- Fat-poor angiomyolipoma (fp-AML) accounts for a large percentage of small renal masses (SRMs), which are radiologically misdiagnosed as renal cell carcinoma (RCC).
- We developed a stepwise algorithm to differentiate fp-AML from RCC (Tanaka H et al. EAU congress 2015, Int J Urol 2017).
- To evaluate the accuracy of the algorithm and its potential utility for treatment decisions for SRM in clinical practice.

Methods

- 226 solid renal masses <4 cm with no visible fat component on unenhanced CT were enrolled.
- Patients underwent DCE-CT and MRI, and the stepwise algorithm was applied.
- Attending doctors decided the initial management (surgery, biopsy, or surveillance) based on radiology reports and the result of the algorithm.
Stepwise algorithm using CT and MRI for differential diagnosis of fat-poor angiomyolipoma in small renal masses: Prospective validation study

Initial management and histological outcomes

<table>
<thead>
<tr>
<th>Probability of AML</th>
<th>Surgery</th>
<th>Biopsy</th>
<th>Surveillance</th>
<th>Histologically confirmed AML, % (No. AML/total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>130 (84%)</td>
<td>3 (2%)</td>
<td>21 (14%)</td>
<td>1% (1/133)</td>
</tr>
<tr>
<td>Intermediate</td>
<td>27 (64%)</td>
<td>8 (19%)</td>
<td>7 (17%)</td>
<td>9% (3/35)</td>
</tr>
<tr>
<td>High</td>
<td>6 (20%)</td>
<td>5 (17%)</td>
<td>19 (63%)</td>
<td>55% (6/11)</td>
</tr>
</tbody>
</table>

AUC = 0.893

Result 4: Outcomes according to each treatment decision

**Surgery**
- Histologically confirmed AML: 2% (1/50)
- RCC: 92%
- fp-AML: 5%
- Other benign tumor: 1%
- Other malignant tumor: 1%

**Biopsy**
- Histologically confirmed AML: 2% (1/50)
- RCC: 37%
- fp-AML: 1%
- Other benign tumor: 13%
- Other malignant tumor: 44%

**Surveillance**
- Histologically confirmed AML: 2% (1/50)
- RCC: 95%
- fp-AML: 5%
- Other benign tumor: 1%
- Other malignant tumor: 95%

Conclusion

- High diagnostic accuracy of the stepwise algorithm for differentiating AML vs. RCC was confirmed using histological reference.

- The risk stratification according to the algorithm may help treatment decisions, showing low incidences of unexpected histological/clinical outcomes for each strategy.

We declare that we have no relevant link to the industry and no conflict of interests in relation to our presentation.