UROTHELIAL CELL CARCINOMA GRADING
FROM BRODERS TO WHO 2016
Leon P. Bignold
Brian L. D. Coghlan
Hubertus P. A. Jersmann

David Paul von Hansemann
Contributions to Oncology
Context, Comments and Translations

Albert C. Broders, Mayo Clinic 1920
Broders AC (1922) Epithelioma of the genitourinary organs.
Ann Surg 75:574–604
URINARY BLADDER CANCER

WHO 1973 (grade 1, grade 2 and grade 3)

GRADE 1 TUMOR HAVE THE LEAST DEGREE OF ANAPLASIA COMPATIBLE WITH THE DIAGNOSIS OF MALIGNANCY.
GRADE 3 APPLIES TO TUMORS WITH THE MOST SEVERE DEGREES OF CELLULAR ANAPLASIA.
GRADE 2 LIES IN BETWEEN
Evolution according WHO 1973

U.C. G I

95.7% no progression
97.5% no tumor death

4.3% progression
2.5% tumor death


U.C. G II

67-90 % no progression

10-33 % progression

U.C. G III

53 % progression
Evolution therapeutic approach

BCG in Tis (CIS)

BCG in high aggressive tumors

No additional treatments in low aggressive tumors
Relative discriminating capacity in morphometry

Among low grades

- Increase nuclear area...................... 19.2
- Loss of polarity............................... 5.7

Between low & high grades  31.2 Loss of polarity
Urothelial cell carcinoma grading WHO 2004

LOW MAGNIFICATION

ORDER

HIGH MAGNIFICATION

ORDER

HIGH GRADE CARCINOMA

DISORDER

PUNLMP

LOW GRADE CARCINOMA

DISORDER
<table>
<thead>
<tr>
<th></th>
<th>Low grade</th>
<th>High grade</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Polarity</strong></td>
<td>Focally lost</td>
<td>Widely lost</td>
</tr>
<tr>
<td><strong>Order</strong></td>
<td>Focally lost</td>
<td>Widely lost</td>
</tr>
<tr>
<td><strong>Nucleus</strong></td>
<td>Uniformly enlarged</td>
<td>Polymorphic</td>
</tr>
<tr>
<td><strong>Mitosis</strong></td>
<td>Scant</td>
<td>Frequent any layer</td>
</tr>
</tbody>
</table>

Urothelial cell carcinoma grading WHO (ISUP)
WHO 1973

TCC G1

TCC G2

TCC G3

ISUP

PUNLMP

Low grade urothelial Carcinoma

High grade urothelial carcinoma
LOW MAGNIFICATION → DISORDER → HIGH GRADE CARCINOMA
G 3
WHO1973
UROTHELIAL
HIGH GRADE
CARCINOMA
WHO2004
IN CASE OF DOUBT

MIB-1
IN CASE OF DOUBT

MIB-1
Urothelial cell carcinoma grading WHO 2004

<table>
<thead>
<tr>
<th></th>
<th>WHO 1973</th>
<th>WHO 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpersonal Agreement</td>
<td>39-64%</td>
<td>39-74%</td>
</tr>
<tr>
<td>Agreement</td>
<td>K: 0.15-0.41</td>
<td>K: 0.14-0.58</td>
</tr>
</tbody>
</table>

Fundació Puigvert

WHO 1973

- TCC G1
- TCC G2
- TCC G3

WHO 2004

- PUNLMP
- Low grade urothelial Carcinoma
- High grade urothelial carcinoma

Fundació Puigvert