The diagnostic value of computed tomography in the evaluation of the spread of ovarian cancer

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Aim
To determine the diagnostic value of CT (computed tomography) in the evaluation of the spread of ovarian cancer.

Objectives
1. To determine the sensitivity, specificity, accuracy, positive predictive value (PPV) and negative predictive value (NPV) in the evaluation of the spread of ovarian cancer.
2. To determine the distribution of tumors size, histological type, degree of the differentiation and a stage of the disease.

Methods
The data of 64 female patients who underwent abdominal and pelvic CT scans due to the suspicion of ovarian cancer during 2014–2015 in Lithuanian University of Health Sciences, Kaunas Clinics (LUHS, KC) were analyzed.

All patients were operated and ovarian cancer was confirmed histologically.

Results
The average size of the tumors was 11.93±5.0cm; 18 (28.13%) cases of tumors were >15cm, 17 (26.56%) – 7–11cm, 16 (25%) – <7cm and 13 (20.31%) cases of tumors were 11–15cm.

By the histological type, 37 (57.7%) cases of tumors were serous type, 13 (20.3%) cases of endometrioid tumors, 4 (6.3%) – mucinous tumors, 3 (4.7%) of clear cells tumors, 2 (3.1%) – mixed epithelial tumors, and for one case of other histological types (sex cord–stromal, germ cell, transitional cell tumors).

By the differentiation degree, 41 (63.5%) cases of tumors were G3, 16 (25.0%) – G1 and 7 (10.9%) – G2 degree of differentiation. 27 (42.2%) of all the cases of ovarian cancer were diagnosed in the stage IIIC, 10 (15.6%) – IVA, 8 (12.5%) – IA, and 7 (10.9%) of cases were diagnosed in IC.

Table 1. Diagnostic values of CT in evaluation of ovarian cancer.

<table>
<thead>
<tr>
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<th>Pathological lymph nodes</th>
<th>Peritoneal carcinomatosis</th>
<th>Ascites</th>
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</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>41.9% (C1:29-53%)</td>
<td>62.5% (C1:41-74%)</td>
<td>80.6% (C1:70-90%)</td>
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<tr>
<td>Specificity</td>
<td>81.1% (C1:72-92%)</td>
<td>81.3% (C1:72-91%)</td>
<td>80.9% (C1:81-91%)</td>
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<tr>
<td>PPV</td>
<td>60.4% (C1:57-85%)</td>
<td>90.9% (C1:64-94%)</td>
<td>91.4% (C1:75-90%)</td>
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<tr>
<td>NPV</td>
<td>60.0% (C1:48-72%)</td>
<td>41.9% (C1:30-54%)</td>
<td>82.8% (C1:74-92%)</td>
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<tr>
<td>Accuracy</td>
<td>51.8% (C1:39-64%)</td>
<td>67.2% (C1:56-79%)</td>
<td>87.5% (C1:70-90%)</td>
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</table>

Conclusion
1. There were a similar number of cases in all tumor size groups, but the most of all cases of ovarian cancer were serous type, G3 degree of differentiation and most often diagnosed in the stage IIIC.
2. The evaluation of ascites showed that CT sensitivity, specificity, PPV, NPV, and accuracy were high. The results of lymph nodes and peritoneal carcinomatosis showed that CT had moderate sensitivity, NPV, and accuracy, but it had high specificity. According to the pathological lymph nodes, PPV was average, but high according to peritoneal carcinomatosis.

Key words
Ovarian cancer, spread, computed tomography