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上皮性卵巢癌患者 CT、MRI 影像学特征及 与血清标志物 CEA、CA199、CA125 水平的相关性研究 *

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摘要 目的:探讨上皮性卵巢癌患者电子计算机断层扫描(CT)、磁共振成像(MRI)影像学特征及与血清标志物癌胚抗原(CEA)、糖类抗原 199(CA199)、糖类抗原 125(CA125)水平的相关性。**方法:**回顾性分析 2014 年 4 月 -2020 年 2 月于我院 83 例诊断为上皮性卵巢癌患者的 CT、MRI 影像学资料,以手术病理结果作为金标准。分析患者的 CT、MRI 影像学特征,检测患者血清 CEA、CA199、CA125 水平,评价患者 CT、MRI 影像学特征与血清 CEA、CA199、CA125 水平的相关性。**结果:**上皮性卵巢癌肿瘤横截面最大径为 14.2mm-121.7mm,平均(18.6±4.3)mm,上皮性卵巢癌以混杂密度/信号为主,形态不规则,病灶多为囊实性,可见壁结节及分隔改变,增强后可见分隔或壁结节明显强化,可伴有腹水、腹膜转移、淋巴结转移。血清 CEA、CA199、CA125 水平分别为(66.35±7.52)ng/mL、(183.59±22.62)U/mL、(225.27±25.34)U/mL。上皮性卵巢癌边界清晰、不清晰的血清 CA199、CA125 水平组间差异有统计学意义($P<0.05$);上皮性卵巢癌形态圆形/类圆形/椭圆形、分叶状、形态不规则的血清 CA199、CA125 水平组间差异有统计学意义($P<0.05$);上皮性卵巢癌患者有壁结节、腹膜转移、淋巴结转移的血清 CEA、CA199、CA125 水平组间差异有统计学意义($P<0.05$);其余 CT、MRI 影像学表现特征组间血清 CEA、CA199、CA125 水平差异无统计学意义($P>0.05$)。上皮性卵巢癌边界与血清 CA125 水平呈正相关($P<0.05$),上皮性卵巢癌形态与血清 CA199、CA125 水平呈正相关($P<0.05$),壁结节与血清 CA125 水平呈正相关($P<0.05$),腹膜转移、淋巴结转移与血清 CEA、CA199、CA125 水平呈正相关($P<0.05$),其余指标之间无明显相关性($P>0.05$)。**结论:**上皮性卵巢癌 CT、MRI 影像表现具有特征性,血清 CEA、CA199、CA125 水平的检测有助于对早期上皮性卵巢癌的诊断以及不同病理类型的判断,CT、MRI 影像学特征与血清 CEA、CA199、CA125 水平具有相关性,可判断疾病的进展及患者预后情况,对指导临床综合治疗及评估患者预后可提供客观依据。

关键词:上皮性卵巢癌;影像学特征;CEA;CA199;CA125;相关性

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Correlation between CT, MRI Imaging Features and Serum Markers CEA, CA199, CA125 in Patients with Epithelial Ovarian Cancer*

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ABSTRACT Objective: To investigate the relationship between Computed Tomography (CT), Magnetic Resonance Imaging(MRI) imaging features and the levels of carcinoembryonic antigen (CEA), Carbohydrate antigen199 (CA199) and Carbohydrate antigen125 (CA125) in patients with epithelial ovarian cancer. **Methods:** The CT and MRI imaging data of 83 patients with epithelial ovarian cancer diagnosed in our hospital from April 2014 to February 2020 were retrospectively analyzed. The CT and MRI imaging features of the patients were analyzed, the serum levels of CEA, CA199 and CA125 were detected, and the correlation between CT and MRI imaging features and serum levels of CEA, CA199 and CA125 was evaluated. **Results:** The maximum cross-sectional diameter of epithelial ovarian cancer was 14.2mm-121.7mm, with an average of (18.6±4.3) mm, epithelial ovarian cancer is mainly mixed density/signal, irregular shape, lesions were mostly cystic and solid, wall nodules and septal changes can be seen, septal or wall nodules can be seen after enhancement, ascites, peritoneal metastasis, lymph node metastasis can be accompanied. The serum levels of CEA, CA199 and CA125 were (66.351±7.52)ng/mL, (183.59±22.62)U/mL, (225.27±25.34)U/mL. There were statistically significant differences in the serum CA199 and CA125 levels of epithelial ovarian cancer with clear boundaries and unclear boundaries ($P<0.05$). There were significant differences in the serum CA199 and CA125 levels of epithelial ovarian cancer in round/para-round/oval, lobulated and irregular shapes

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($P<0.05$). There were statistically significant differences in serum CEA, CA199 and CA125 levels in epithelial ovarian cancer patients with mural nodules, peritoneal metastasis and lymph node metastasis ($P<0.05$), while other CT and MRI imaging features showed no significant difference in serum CEA, CA199 and CA125 levels between the groups ($P>0.05$). The boundary of epithelial ovarian cancer was positively correlated with serum CA125 level ($P<0.05$), the morphology of epithelial ovarian cancer was positively correlated with serum CA199 and CA125 level ($P<0.05$), and the wall nodules were positively correlated with serum CA125 level ($P<0.05$). Peritoneal metastasis and lymph node metastasis were positively correlated with serum levels of CEA, CA199 and CA125 ($P<0.05$), while there was no significant correlation between other indexes ($P>0.05$). **Conclusion:** CT and MRI imaging features of epithelial ovarian cancer are characteristic. The detection of serum CEA, CA199 and CA125 levels is helpful for the diagnosis of early epithelial ovarian cancer and the judgment of different pathological types. CT and MRI imaging features are correlated with serum CEA, CA199 and CA125 levels. It can judge the progress of the disease and the prognosis of the patients, and provide objective basis for guiding clinical comprehensive treatment and evaluating the prognosis of the patients.

Key words: Epithelial ovarian cancer; Imaging features; CEA; CA199; CA125; Correlation

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前言

卵巢癌是女性生殖系统的三大恶性肿瘤之一,90%以上属于上皮性卵巢癌^[1-3]。卵巢癌早期起病隐匿,无明显特异性的临床症状,发现确诊时多为中晚期,治疗方式主要为手术配合放疗和化疗,但有腹膜转移、淋巴结转移等中晚期患者临床治疗方案多无明显有效性,主要是减轻患者疼痛和延长生存时间,导致患者治疗效果和预后较差,长期生存率降低。血清肿瘤标志物癌胚抗原(CEA)、糖类抗原 199(CA199)、糖类抗原 125(CA125)水平在卵巢癌的早期诊断、良恶性鉴别和患者预后的监测中具有重要价值,可在一定程度上提示卵巢癌的临床分期和病理类型^[4-5]。电子计算机断层扫描(CT)、磁共振成像(MRI)检查可了解卵巢癌患者病灶位置、大小、形态、与周围组织关系、腹水、有无腹膜转移和淋巴结转移等情况,是判断卵巢癌临床分期最为有效的影像学检查手段^[6-8]。张晓红等^[9]研究显示 MRI 强化率及 ADC 值可对上皮性卵巢癌进行分型诊断,有助于上皮性卵巢癌生物学行为特征的分析。因此,血清肿瘤标志物与 MRI 影像学表现特征可能存在一定联系,本研究旨在探讨上皮性卵巢癌 CT、MRI 影像学特征及与血清标志物 CEA、CA199、CA125 水平的相关性,现报道如下。

1 资料与方法

1.1 一般资料

回顾性分析 2014 年 4 月 -2020 年 2 月于我院 83 例诊断为上皮性卵巢癌患者的 CT、MRI 影像学资料,以手术病理结果作为金标准。年龄 23-74 岁,平均(51.37±5.64)岁。纳入标准:经手术病理证实为上皮性卵巢癌且均行 CT、MRI 影像学检查及血清 CEA、CA199、CA125 检测的患者;无 CT、MRI 检查禁忌症的患者;首诊患者,既往无卵巢(盆腔)手术或放疗或化疗的患者;无妇科感染、炎症或其他妇科疾病;无节育环患者。排除标准:手术病理结果不能确诊或图像质量不符合诊断标准;合并严重心、肝、肾功能障碍患者;合并其他器官恶性肿瘤;合并其他严重的免疫系统、精神系统或内分泌系统疾病的患者。

1.2 CT、MRI 检查方法

所有患者均取仰卧位,嘱患者平静呼吸,检查前做好肠道

准备,CT 进行全腹扫描,MRI 扫描范围上缘包括双侧髂骨上方、下方包括双侧腹股沟。采用 GE Discovery HD 750 CT 机进行扫描,电压 140kV,电流 250 mA,层厚 5 mm,层间距 5 mm,视野(FOV):380 mm×380 mm。增强注射药物为碘海醇,静脉注射,流速为 3 mL/s,注射造影剂后以同样速率注射 50ml 生理盐水,在注射后 25s、60s 分别进行扫描获得动脉期和静脉期图像。MRI 成像系统采用 GE 公司的 Discovery 3.0T MRI,体部相控阵线圈。扫描参数:横断面 T1WI:TR 500 ms,TE Min;横断面 T2WI:TR 3900 ms,TE 85 ms;T2WI 抑脂:TR 6426 ms,TE 78 ms;DWI:TR 2400ms,TE Min,b 值为 1000 s/mm²。层厚 4 mm,层距 1 mm,FOV:300 mm×380 mm,矩阵 224×320,NEX:1。平扫后经肘静脉注射 Gd-DTPA 造影剂,剂量为 0.1 mmol/kg,注射造影剂后在 T1WI 脂肪抑制序列进行轴位薄层扫描,扫描后进行相应冠状位及矢状位重建。

1.3 图像分析

由 2 名具有丰富影像诊断经验的医师对 CT、MRI 图像进行观察分析:① 上皮性卵巢癌来源位置(左侧、右侧、双侧)、大小(横截面最大径)、密度/信号;② 上皮性卵巢癌边界(清晰、不清晰)、形态(圆形/类圆形/椭圆形、分叶状、不规则);③ 上皮性卵巢癌病灶成分(纯囊性、囊实性、实性);④ 上皮性卵巢癌强化程度(明显强化、轻度-中度强化);⑤ 上皮性卵巢癌有无壁结节、有无分隔、有无腹水、有无腹膜转移、有无淋巴结转移。

1.4 血清标志物 CEA、CA199、CA125 检测

入院后采集所有患者空腹肘静脉血 5 mL,血样不加入抗凝剂,静置 30 分钟以上,然后利用离心机离心处理 5 min,取其上清液储存。采用罗氏 cobase411 型全自动电化学发光免疫分析仪检测患者血清 CEA、CA199、CA125 水平,操作过程均严格按照仪器和试剂盒说明进行。血清标志物正常临界值:CEA 为 10 ng/mL,CA199 为 37U/mL、CA125 为 35 U/mL。

1.5 统计学方法

采用 SPSS22.0 统计分析软件。计量资料采用均数±标准差($\bar{x}±s$)表示及 t 检验。计数资料以频数和百分率表示及 χ^2 检验。多组间比较采用单因素方差分析。采用 Spearman 秩相关分析 CT、MRI 影像学特征与血清 CEA、CA199、CA125 水平的相关性, $P<0.05$ 为差异有统计学意义。

2 结果

2.1 上皮性卵巢癌患者 CT、MRI 影像学表现特征及血清 CEA、CA199、CA125 水平

本组 83 例上皮性卵巢癌患者中,24 例为双侧卵巢来源,37 例来源于左侧卵巢,22 例来源于右侧卵巢;肿瘤横截面最大径为 14.2mm-121.7mm,平均 (18.6 ± 4.3) mm;76 例上皮性卵巢癌呈混杂密度/信号,2 例为 CT 上低密度,T1WI 上呈低信号,T2WI 上高信号,信号均匀,5 例为 CT 上等或稍高密度,T1WI

上呈稍低信号,T2WI 上稍高信号;37 例上皮性卵巢癌边界清晰,46 例边界不清晰;7 例上皮性卵巢癌呈圆形/类圆形/椭圆形,10 例呈分叶状,66 例(79.52%)表现为形态不规则;2 例上皮性卵巢癌为纯囊性,76 例为囊实性,5 例为实性;62 例上皮性卵巢癌呈明显强化,21 例呈轻度-中度强化;63 例可见壁结节改变;33 例可见分隔改变;18 例可见腹腔、盆腔积液;12 例可见腹膜转移;16 例可见淋巴结转移。血清 CEA、CA199、CA125 水平分别为 (66.35 ± 7.52) ng/mL、 (183.59 ± 22.62) U/mL、 (225.27 ± 25.34) U/mL。典型病例见图 1-2。

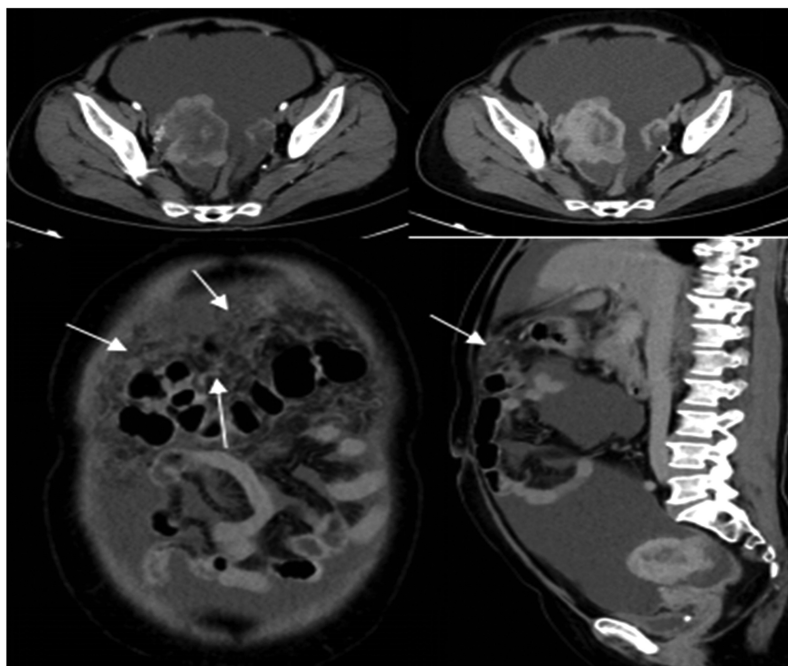


Fig. 1 Female, 56 years old, epithelial ovarian cancer of right ovary origin, the lesions were irregular, cystic and solid, mainly solid components, the maximum cross-sectional diameter of the tumor was about 73.2 mm. The boundary of the tumor was still clear, and the enhancement showed obvious uneven enhancement. Multiple effusions were found in the abdominal cavity and pelvic cavity, irregular thickening of peritoneum (arrow) can be seen in coronal and sagittal view, indicating peritoneal metastasis.

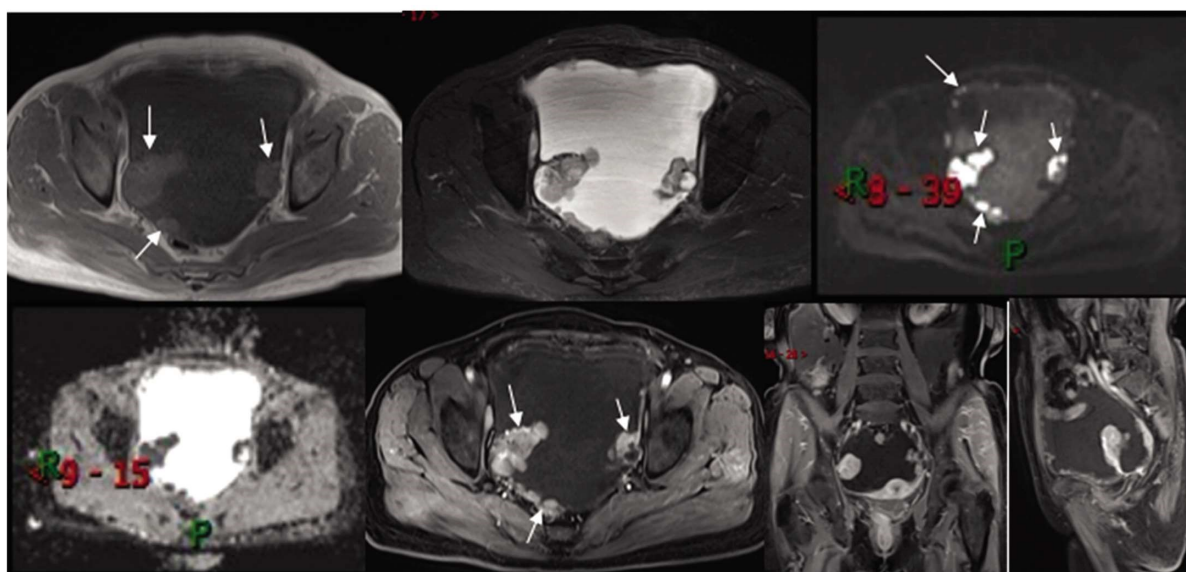


Fig. 2 Female, 44 years old, epithelial ovarian cancer of bilateral ovarian origin, the lesions showed cystic and solid mixed signals, mainly cystic components. The boundary of the lesions was not clear, and the shape was irregular. Multiple nodules with different sizes and walls could be seen (arrow). The mural nodules were isointense on T1WI, slightly hyperintense on T2WI, hyperintense on DWI, hypointense on ADC, the enhancement showed obvious uneven enhancement.

2.2 上皮性卵巢癌患者 CT、MRI 影像学表现特征与血清 CEA、CA199、CA125 水平的关系

上皮性卵巢癌边界清晰、不清晰的血清 CA199、CA125 水平组间差异有统计学意义($P<0.05$); 上皮性卵巢癌形态圆形 / 类圆形 / 椭圆形、分叶状、形态不规则的血清 CA199、CA125 水

平组间差异有统计学意义($P<0.05$); 上皮性卵巢癌患者有壁结节、腹膜转移、淋巴结转移的血清 CEA、CA199、CA125 水平组间差异有统计学意义($P<0.05$); 其余 CT、MRI 影像学表现特征组间血清 CEA、CA199、CA125 水平差异无统计学意义($P>0.05$)。见表 1。

表 1 上皮性卵巢癌患者 CT、MRI 影像学表现特征与血清 CEA、CA199、CA125 水平的关系

Table 1 Relationship between CT, MRI imaging features and serum CEA, CA199, CA125 levels in patients with epithelial ovarian cancer

Items	n	CEA(ng/mL)	T/F value	P value	CA199(U/mL)	T/F value	P value	CA125 (U/mL)	T/F value	P value
Origin of epithelial ovarian cancer			1.258	0.681		2.154	0.394		1.337	0.914
Left	37	69.63±5.25			176.38±23.61			215.38±28.37		
right	22	63.82±6.56			186.92±19.38			235.91±24.92		
Bilateral	24	65.22±6.38			182.25±21.75			220.83±19.31		
Density/signal of epithelial ovarian cancer			0.952	0.884		8.679	0.174		6.394	1.527
Hybrid density / signal	76	67.58±7.36			180.33±23.17			218.39±25.14		
Density/signal was basically uniform	7	66.01±6.69			187.61±18.36			234.11±20.86		
Boundary of epithelial ovarian cancer			8.125	2.347		10.367	0.039		21.381	0.036
Clear	37	66.17±7.92			156.39±22.83			189.01±21.84		
Blurring	46	67.19±7.01			193.82±28.67			255.58±26.38		
Morphology of epithelial ovarian cancer			2.047	0.537		17.348	0.012		25.071	0.024
Circle/quasi circle/ellipse	7	47.36±6.38			147.39±23.61			187.56±25.86		
Phyllodes	10	62.51±7.62			148.64±18.37			186.37±26.74		
Irregular shape	66	69.33±7.25			205.22±19.72			252.94±22.54		
Composition of epithelial ovarian cancer lesions			1.638	0.317		2.076	0.483		3.601	0.187
Pure cystic	2	63.54±6.19			172.06±17.93			225.34±24.67		
Cystic and solid	76	60.16±7.26			180.34±21.06			214.38±23.60		
Substantiality	5	68.03±7.02			178.33±19.15			231.50±25.14		
Strengthening degree			2.684	0.517		3.647	1.364		5.347	0.095
Obvious enhancement	62	63.59±9.67			193.52±18.37			230.94±26.37		
Mild to moderate enhancement	21	70.25±8.34			180.77±23.54			218.39±15.76		
Parietal tubercle			52.364	0.000		36.345	0.008		28.146	0.012
Yes	63	82.03±8.61			204.34±30.54			238.91±26.38		
No	20	45.96±7.52			157.96±20.58			201.42±18.34		
Partition change			7.124	1.356		1.475	0.574		1.135	0.547
Yes	33	67.58±5.92			188.24±24.33			225.63±26.37		
No	50	66.12±6.92			180.54±21.88			223.91±24.38		
Peritoneal and pelvic effusion			1.245	0.056		2.345	2.031		3.125	1.021
Yes	18	70.36±6.35			188.64±27.95			231.25±22.95		
No	65	61.28±7.54			175.39±25.64			213.58±30.25		

续表 1 上皮性卵巢癌患者 CT、MRI 影像学表现特征与血清 CEA、CA199、CA125 水平的关系

Table 1 Relationship between CT, MRI imaging features and serum CEA, CA199, CA125 levels in patients with epithelial ovarian cancer

Items	n	CEA(ng/mL)	T/F value	P value	CA199(U/mL)	T/F value	P value	CA125 (U/mL)	T/F value	P value
Peritoneal carcinomatosis			19.347	0.024		34.682	0.000		55.347	0.000
Yes	12	88.34±7.12			210.39±22.44			263.74±33.84		
No	71	59.61±6.34			170.24±25.39			199.64±29.34		
Lymph node metastasis			22.589	0.004		36.845	0.008		66.945	0.000
Yes	16	93.45±6.34			205.69±23.68			247.38±31.24		
No	67	58.37±6.89			169.28±24.57			195.72±23.58		

2.3 上皮性卵巢癌患者 CT、MRI 影像学表现特征与血清 CEA、CA199、CA125 水平的相关性

上皮性卵巢癌边界与血清 CA125 水平呈正相关 ($P<0.05$), 上皮性卵巢癌形态与血清 CA199、CA125 水平呈正相关

($P<0.05$), 壁结节与血清 CA125 水平呈正相关 ($P<0.05$), 腹膜转移、淋巴结转移与血清 CEA、CA199、CA125 水平呈正相关 ($P<0.05$), 其余指标之间无明显相关性 ($P>0.05$), 见表 2。

表 2 上皮性卵巢癌患者 CT、MRI 影像学表现特征与血清 CEA、CA199、CA125 水平的相关性

Table 2 Correlation between CT, MRI imaging features and serum CEA, CA199, CA125 levels in patients with epithelial ovarian cancer

Items	CEA		CA199		CA125	
	r	P	r	P	r	P
Origin and location of epithelial ovarian cancer	0.224	0.255	0.224	0.152	0.247	0.175
Density/signal of epithelial ovarian cancer	0.123	0.434	0.127	0.242	0.178	0.311
Boundary of epithelial ovarian cancer	0.122	0.315	0.137	0.125	0.516	0.025
Morphology of epithelial ovarian cancer	0.115	0.314	0.476	0.012	0.445	0.031
Strengthening degree	0.121	0.072	0.125	0.133	0.164	0.254
Parietal tubercle	0.214	0.314	0.263	0.196	0.515	0.021
Partition change	0.126	0.315	0.231	0.766	0.234	0.186
Peritoneal and pelvic effusion	0.277	0.052	0.213	0.076	0.112	0.089
Peritoneal carcinomatosis	0.562	0.023	0.486	0.031	0.511	0.000
Lymph node metastasis	0.612	0.003	0.524	0.002	0.496	0.001

3 讨论

上皮性卵巢癌可分为低级别和高级别两大类, 具有高度的异质性, 低级别上皮性卵巢癌进展相对缓慢, 病灶较局限, 一般以手术为主, 预后较好, 而高级别上皮性卵巢癌侵袭性较强, 扩散快, 进展迅速, 发现时多为晚期, 多需手术配合放疗和化疗, 预后差^[10-12]。因此, 血清肿瘤标志物的监测对卵巢癌的早期诊断, 术前影像学检查了解病变临床分期尤为必要, 可为临床治疗方案的选择提供客观依据, 评估患者预后。

本研究中, 上皮性卵巢癌病灶较大, 郑石磊等^[13]研究显示交界性卵巢肿瘤最大径大于侵袭性卵巢肿瘤, 可能因为纳入病例中不同病理类型以及不同研究人群差异所致。上皮性卵巢癌以混杂密度/信号为主, 形态不规则, 病灶多为囊实性, 推测可能纳入病例中上皮性卵巢癌恶性程度较高, 肿瘤细胞较活跃, 分化程度不同, 具备不完整的包膜, 从而导致病变形态不规则, 向多个方向浸润生长, 与 Chen JB 等^[14]报道一致。甘晓晶^[15]等通过多层螺旋 CT(MSCT)增强扫描反应了卵巢癌患者肿瘤实性成分的血供、血流情况, 显示 CT 增强强化程度与 FIGO 分

期呈正相关, 病灶强化越明显, FIGO 分期越严重。本研究中上皮性卵巢癌患者多可见壁结节及分隔改变, 增强后分隔或壁结节明显强化, 提示强化程度可在一定程度上诊断并对卵巢癌进行分期。研究发现壁结节可作为上皮性卵巢癌的特征性表现, 壁结节及分隔的出现常常提示病灶为恶性病变可能性大, 且壁结节出现的越多, 则提示病灶恶性程度越高, 两者呈正相关性^[16-18]。此外, 中晚期卵巢癌患者可伴有腹水、腹膜转移、淋巴结转移, 也从侧面反映了卵巢癌的恶性程度。

CEA 是一种广谱肿瘤标记物, 诊断卵巢癌的特异性相对不高, 但具有一定的参考诊断价值。有研究显示在影像学表现出异常时, 血清 CEA 水平将会显著升高^[19,20]。CA199 临床上多作为胰腺癌和胆管癌的肿瘤标记物, 来源于人结肠癌细胞株^[21,22]。但有研究报道, 在粘液性卵巢癌的患者中, CA199 可作为诊断的肿瘤标记物^[23,24]。CA125 在正常卵巢上皮细胞无表达, 是一种跨膜糖蛋白, 在卵巢癌的患者中, 其血清水平多数均呈阳性, 在卵巢癌的诊断、临床分期和病理类型中具有广泛的临床应用价值^[25,26]。于晨洁等^[27]和伍雪梅等^[28]研究发现, CA125 在晚期卵巢癌患者中, 阳性率可达 80%-85%, 且血清水平的高

低与患者预后相关。在浆液性卵巢癌的患者,血清 CA125 呈明显高水平状态,血清水平的高低与卵巢癌临床分期相关,临床分期越高,其含量越高,对浆液性卵巢癌的诊断价值较高^[20]。研究显示,在 IV 期卵巢癌的患者,CA125 水平阳性率可达 100%,而在早期升高程度可能不高,而 CA125 在其他一些妇科良性肿瘤或恶性肿瘤中均可出现一定程度的升高,因此需注意此类情况的鉴别诊断^[30,31]。本研究显示,血清 CEA、CA199、CA125 水平分别为 (66.35±7.52)ng/mL、(183.59±22.62)U/mL、(225.27±25.34)U/mL,上皮性卵巢癌边界清晰、不清晰的血清 CA199、CA125 水平组间差异有统计学意义 ($P<0.05$),上皮性卵巢癌形态圆形 / 类圆形 / 椭圆形、分叶状、形态不规则的血清 CA199、CA125 水平组间差异有统计学意义 ($P<0.05$),上皮性卵巢癌患者有壁结节、腹膜转移、淋巴结转移的血清 CEA、CA199、CA125 水平组间差异有统计学意义 ($P<0.05$),提示血清 CEA、CA199、CA125 水平与不同影像学征象相关,联合检测具有重要作用。董素民等^[32]研究显示血清 CA125、CA199、VEGF-C 的联合检测可预测卵巢癌腹膜后淋巴结转移。易琳等^[31]研究表明血清 CEA、CA199、CA125 联合检测可显著提高早期卵巢癌的诊断成功率。王灵芝等^[33]研究显示 MRI 与血清 CA125、CA199 联合检测可显著提高 I 期上皮性卵巢癌的诊断阳性率。本研究通过对上皮性卵巢癌 CT、MRI 影像学特征与血清肿瘤标志物 CEA、CA199、CA125 水平的相关性分析显示,上皮性卵巢癌边界与血清 CA125 水平呈正相关,上皮性卵巢癌形态与血清 CA199、CA125 水平呈正相关,壁结节与血清 CA125 水平呈正相关,腹膜转移、淋巴结转移与血清 CEA、CA199、CA125 水平呈正相关,提示肿瘤在边界不清、形态不规则、壁结节、腹膜转移和淋巴结转移等恶性影像学征象上,血清肿瘤标志物 CEA、CA199、CA125 水平将会显著升高,反映上皮性卵巢癌的生物特性。

综上所述,上皮性卵巢癌 CT、MRI 影像表现具有特征性,可评估肿瘤来源、累及范围、有无腹膜转移、淋巴结转移等了解患者肿瘤的大致生物学行为,血清 CEA、CA199、CA125 水平的检测有助于对早期上皮性卵巢癌的诊断以及不同病理类型的判断,CT、MRI 影像学特征与血清 CEA、CA199、CA125 水平具有相关性,可判断疾病的进展及患者预后情况,对指导临床综合治疗及评估患者预后可提供客观依据。

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