

ASSESSMENT OF ABDOMINAL RESECTABILITY WITH PET/CT IN LOCALLY ADVANCED OVARIAN CANCER

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Introduction:

In locally advanced ovarian cancer the primary treatment is debulking surgery followed by chemotherapy. Surgery is recommended in patients who can be debulked upfront to no residual tumour. Therefore, there are some specific criteria against primary surgical approach (diffuse deep infiltration of the root of small bowel mesentery; large and diffuse carcinomatosis of the small bowel, extensive involvement of superior abdomen or multiple visceral metastases). In case of inoperable disease, neoadjuvant chemotherapy with interval surgery should be planned.

The aim of this study is to evaluate the capability of FDG-PET/CT to assess abdominal resectability in advanced ovarian cancer, before surgery (primary or interval surgery).

Materials and Methods:

Unicenter, retrospective, observational study included 35 patients (age 63.11, range 40-82 years) with clinical and radiological suspicion of primary advanced ovarian cancer.

All patients underwent contrast enhanced PET/CT before surgery. Based on criteria against surgical approach, patients were classified as resectable or non resectable.

Sensitivity, specificity, NPV, PPV and accuracy for PET/CT to predict complete surgical resectability were calculated (R0).

Results:

Thirty-one patients were concordant (18 patients were considered resectables by PET/CT and surgery, 13 patients were considered non resectables by PET/CT and surgery).

Only 4 patients were discordant: 1 patient presented inoperable millitary carcinomatosis, not visible by PET/CT.

The other 3 patients were finally resectables but it seems not by PET/CT (large and diffuse carcinomatosis of the small bowel or extense involvement of superior abdomen).

For detection of abdominal resectability, PET/CT presented a sensitivity of 85.7% (95% CI:64-97), specificity 92.8%(95% CI:66-100), NPV 81.2%(95% CI:54-96), PPV 94.7%(95% CI:74-100) and accuracy of 88.57%(95% CI:73-96).

PET/CT also revealed extrabdominal distant metastases in 9/35 patients (29%), mainly represented by supradiaphragmatic lymph nodes (8/9 patients), associated with additional metastases in pleura and/or liver.

Patient Characteristics		
FIGO (PET CT)		Nº Patients
	III	25
	IV	10
Histopathology	High grade serous	30
	Poorly differentiated serous	2
	Mucinous	1
	Serous borderline	2
Primary Treatment	Surgery	6
	Neoadjuvant chemotherapy	28
	No chance of treatment	1

	PET resectable	PET non resectable	
Surgery: Resectable	18	3	21
Surgery: non Resectable	1	13	14
	19	16	35

Values of PET/CT for detection abdominal resectability

Sensitivity	85.7% (95% CI:64-97)
Specificity	92.8%(95% CI:66-100)
NPV	81.2%(95% CI:54-96)
PPV	94.7%(95% CI:74-100)
Accuracy	88.57%(95% CI:73-96)

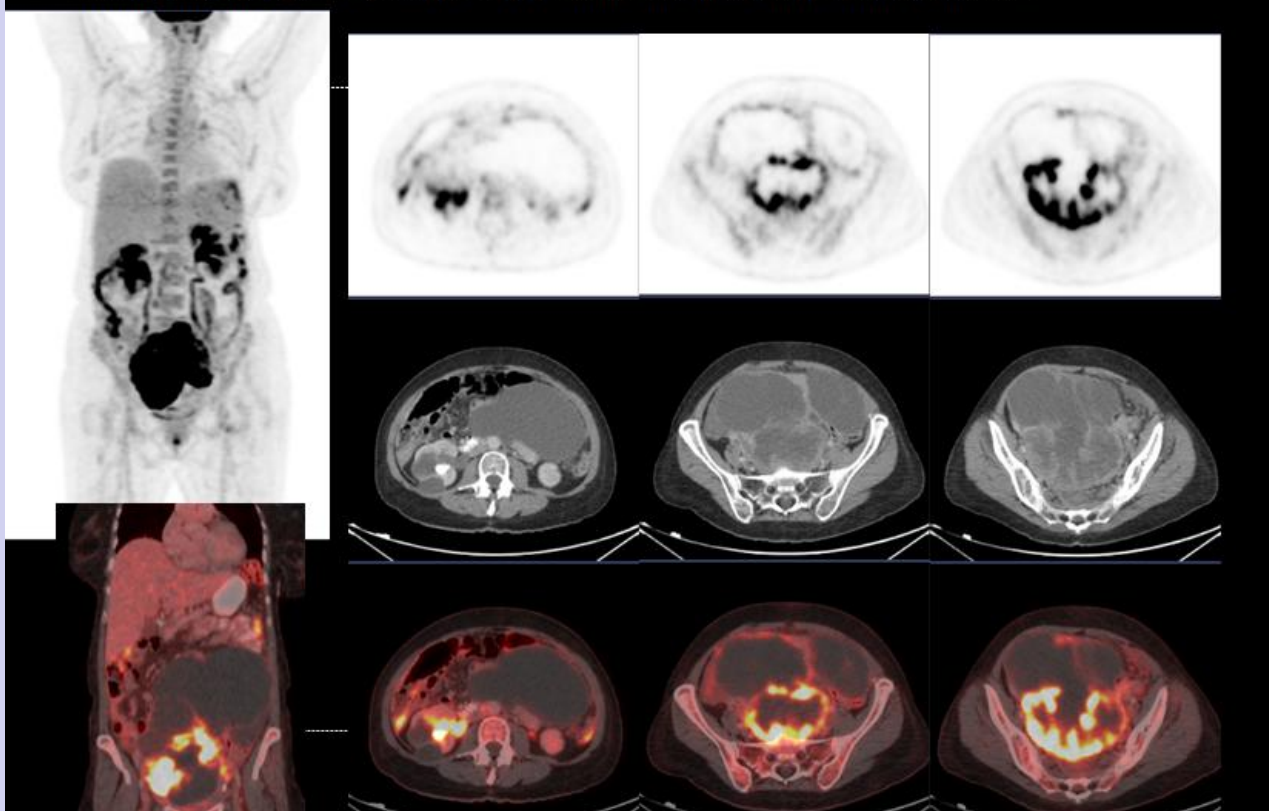
Conclusions:

In locally advanced ovarian cancer, PET/CT had good results in assessment of surgical abdominal resectability, especially in terms of specificity, PPV and accuracy.

PET/CT could be helpful in patients with questionable initial therapeutic decision, due to its ability to detect additional unsuspected extraabdominal disease.

62y. US and CT Complex abdominal mass.

PET/CT: Huge pelvic mass. Suspicion of the small bowel involvement. This patient was classified as non resectable disease by PET/CT. Complete surgical resection was possible. Histopathologic results: pT1c pN0. IFS:6 months. Relapse with peritoneal disease.



56 y. US: complex adnexal mass suspicious of ovarian neoplasm PET/CT:Peritoneal metastases with extensive involvement of superior abdomen (A), Omental cake(B), Complex adnexial bilateral mass (C), Internal mammary node metastases (D). This patient was classified as non resectable disease by PET/CT. Laparoscopy : non resectable (superior abdomen). Treatment: NAQT 4 cycles + interval surgery. Histopathological results: ypT3c ypN1 (IIIC)

