

HIPEC can Influence the Malignant Ascites Production

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Malignant ascites

Usually represents diffuse peritoneal malignant cells spreading

10 % of tumors connected with ascites presence (10 – 15 % GIT)
20 % of malignant ascites have primary tumor of unknown origin

Female:

47 % ovarian cancers
11 % non-Hodgkin lymphomas
9 % gallbladder cancer
13 % ? + rare tumors

Male:

50 % GIT tumors
- CRC
- ca stomach
- ca pancreas, gallbladder



FLUID PRODUCTION

(secretion)

- increased vascular permeability
(cytokines, VEGF, VPF, TNF, IL6, IL10 ...)

REDUCED OUTFLOW

(lymphatic drainage obstruction)


SIGNS :

- Increasing bellyline
- Abdominal pain
- Nausea, vomiting
- **DYSPNEA**

IMAGING :

- Abdominal US – even small collections
- CT
- ? MRI

? *Is that ascites malignant ?*

- bloody or bloodyserous aspect
- protein > 2,5 g/100 ml
- albumin > 1,5 g/100 ml
- cholesterol concentration > 45 µg/100 ml
- fibronectin concentration > 100 µg/ml
- LDH concentration > 60 U/l
- *cytology*  specificity 100 %
sensitivity 48 %
- tumor markers – beta HCG, CEA, CA 125 ...
- ? cytokines
- *laparoscopy + biopsy* – 86% sensitivity

Prognosis



- ▶ medium time survival **1 – 8 months**
- ▶ 1 year survival **0 – 13 %**

Better prognosis in ovarian
comparing to GIT tumors



Palliative treatment

1. Medicamentous – reduction intake of salt
– reduction intake of fluids } minimal effect
– **diuretics (spiro lacton)** }

2. Ascites puncture – effective (90 %) → most often used

many complications

- technical
- metabolic** (dehydration, hypoproteinemia, renal insufficiency, hypotension ...)

} only
Ø 10 days

3. Ascites drainage
- outer (tunneled drain)
 - inner – peritoneovenous shunts
 - Denver
 - Le Veen

Many complications (40- 60 %) → occlusion, infection, DIC, tumor dissemination

functional Ø 83 days

patients survival **11 – 33 weeks**

4. Intraperitoneal cytostatic treatment

Limited reabsorption in peritoneal cavity → high cytostatic concentration

Cisplatina, Mitomycin C, FU, Bleomycin, (TN α , interferons, metaloproteinase inhibitors...)

SUPPORTED BY HEAT (42 + 43 °C)



⊕ debulking

HIPEC

⊖ debulking

HIPEC in FHB (1999 – 6/2008)

121 pts. (146 HIPECs)



30 Ascites (24,8 %)



(valuated) 28

MALE

FEMALE

12

16

**Ø age 52,6 yrs.
(32 – 72)**

**Ø age 50,4 yrs.
(26 – 74)**

HIPEC	⊕ DEBULKING	22
	⊖ DEBULKING	8

Dg.:

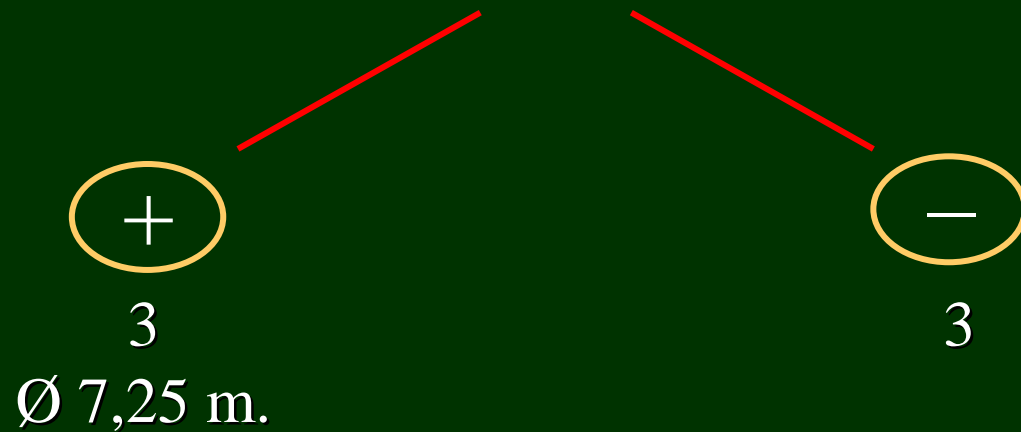
– Pseudomyxoma peritonei	7
– Mesothelioma	5
– CRCa	5
– ovarian ca	10
– others	3

Duration of ascites before operation

Ø 5,3 m (2 – 48)

ONLY HIPEC (6)

ASCITES UNTIL DEATH

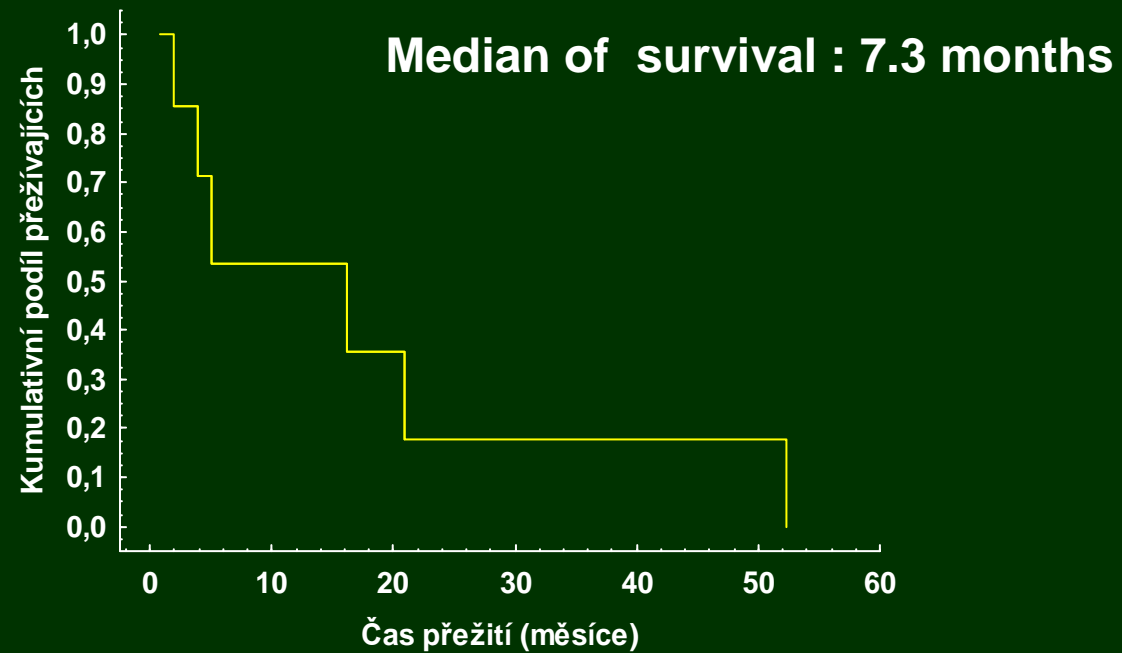


SURVIVAL RATE

0,2 – 12 m (0,2 ,0,5 , 3,4,6, 12)

Only HIPEC – survival time

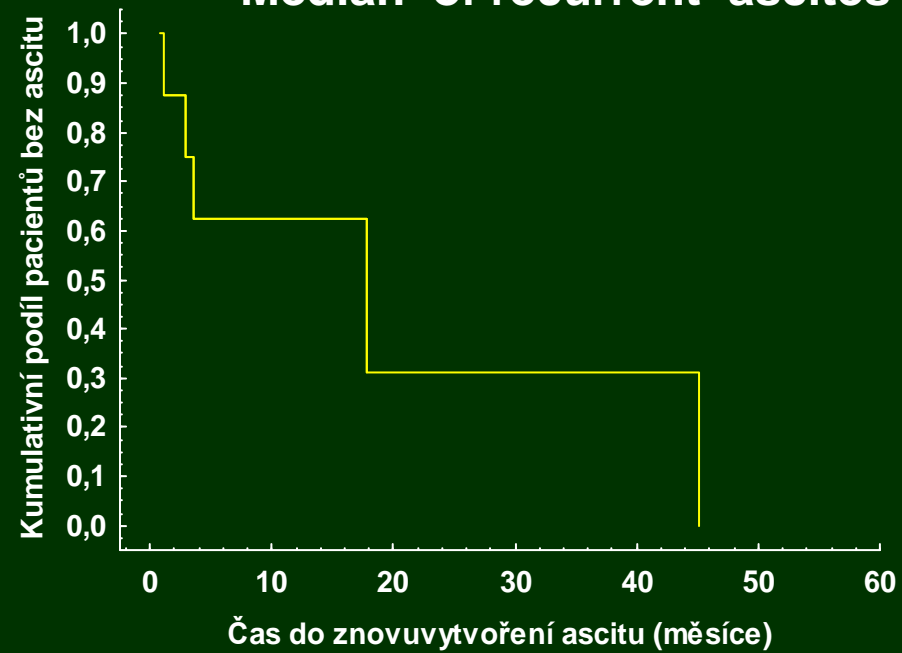
N = 6



Only HIPEC – time to recurrent ascites

N = 6

Median of recurrent ascites time : 9.2 months



Recurrent ascites appeared in 3 patients (50 %)

HIPEC + DEBULKING (22)

ASCITES

+

-

5
Ø 6,3 m.

17

SURVIVAL RATE

+7

still alive

Ø 11,7 m.

15

> 1 yr survived 4 pts.

> 1 yr9 pts.

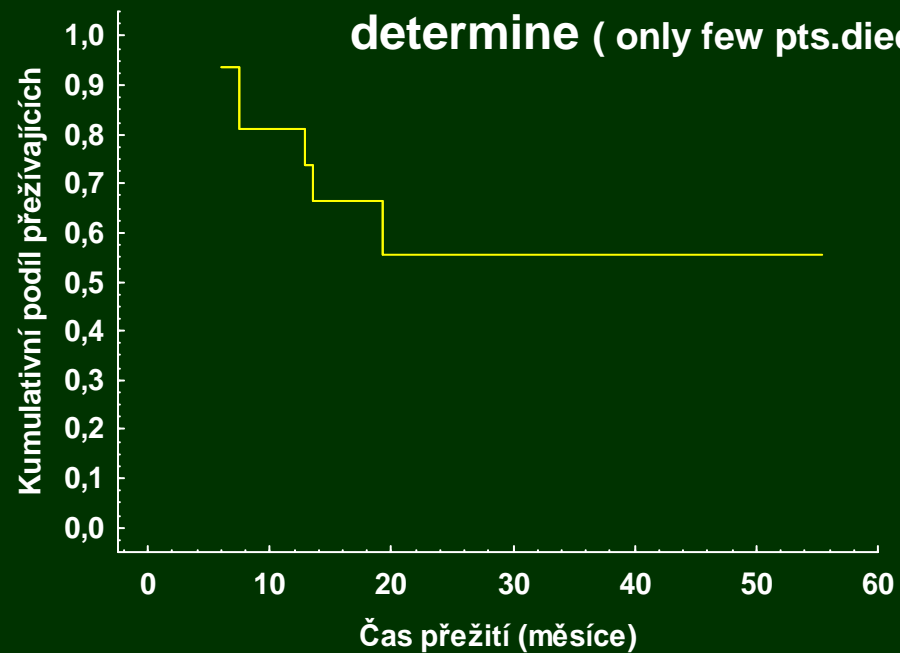
> 2 yrs....4 pts.

> 4 yrs....2 pts.

HIPEC + debulking –survival time

N = 22

Median of survival : not possible to determine (only few pts.died)



HIPEC + debulking –time to recurrent ascites

N = 22

Median of ascites recurrence time:
not possible to determine



Recurrent ascites appeared in 5 pts. (22,7%).

CONCLUSIONS

1. With the help of HIPEC (-/ + debulking) roughly 60 % of patients will not create malignant ascites until their death. In about 40 % of patients the ascites will form again but in the limited amount, usually without need of punctures.
2. The importance of this procedure is in extension of the lifetime and mainly in substantial improvement of QL of patients suffering from the hopeless malignant illnesses.
3. In comparison with the other treatment modalities HIPEC seems to be highly effective.

THANK YOU FOR YOUR ATTENTION

