

**MINISTRY OF HEALTH PROTECTION UKRAINE
UKRAINIAN MEDICAL STOMATOLOGICAL ACADEMY**

DEPARTMENT OF ONCOLOGY



It is ratified on the methodical conference
Protocol №2 from September, 8 2018p.
Manager of department, MD

prof. Bashtan of V. P.

**METHODICAL INSTRUCTIONS FOR STUDENTS
5 course of medical faculty**

THEME: “Cancer of pancreas”

Educational object: oncology

**Prepared methodical instruction:
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THEME: CANCER OF PANCREAS

Amount of hours: 2 educational hours.

Material and methodical providing of theme: educational apartments: educational rooms, chambers, roentgenologic cabinet and computer tomograph cabinet of ultrasound.

1. Actuality of theme.

The cancer of pancreas at the beginning of the third millennium remains the most fatal tumour. Neither surgical nor therapeutic methods do not allow to control duration of illness in majority of patients.

The cancer of pancreas makes more than 90% malignant diseases of pancreas (second place after cancer of colon as principal reason of death rate at the tumours of gastroenteric highway). Morbidity by the cancer of pancreas on Ukraine in recent years is increased and is made to 4% from all malignant new formations. With age morbidity grows sharply: in 40-50 years folds 10 on 100 thousand population, and in 75-80 years – 116 on 100 thousand. Men which bind to smoking are ill more frequent. More than in 80% patients of tumour of this localization is diagnosed in the IV stage of development of disease. That is why knowledge of this pathology it is very important for the doctors of all professions and necessarily at the study by the students of a 5 course.

2. Educational aims:

To know (D-II)

1. Etiology, pathogeny of cancer of pancreas
2. Clinical classification
3. Obligatory methods of inspection of patients
4. Concomitant pathology
5. Basic methods of treatment of patients with the cancer of pancreas
6. To know risk groups
7. Prognosis

To be able: (D-III)

1. To conduct the common objective and special inspection of patients
2. To define the value of additional methods of inspection at patients
3. To appoint individual treatment of patients with the cancer of pancreas depending on a stage
4. To appoint prophylactic measures on the fight against this pathology.
5. Development of creative capabilities of students in the process of clinical work with hospital charts and in the process of reviews and intercourse with patients, and also drafting of curricula of treatment.

3. Aims of development of personality.

Basic moments of development and forming of personality of future specialist on an object oncology related to the correct understanding of deontological features, professional responsibility of doctors of oncologists.

3.1. Interdisciplines integration.

Discipline	To know	To be able
Anatomy	Structure of pancreas, blood supply, lymph flow	
Pathoanatomy	Morphological changes at the precancerous diseases and states in ferrous fabric of pancreas, histological variants of malignant process.	To estimate the results of cytological and histological researches
General surgery and therapy	Methods of physical, laboratory and instrumental inspections of pancreas. Volume and principles of surgical interferences on a pancreas.	To conduct physical and clinical inspection of patients with the cancer of pancreas. To be able to read sciagrams and computers pictures x-ray photography inspection of pancreas.

3.2. Table of contents of theme.

Etiology.

Morbidity on the cancer of pancreas can be related to smoking. Risk, in those that smoke out one pack of cigarettes on a day, is 4 times higher than in those, that does not smoke. It is considered that general responsibility is carried by nitrosamines which are in a tobacco, get in a pancreas react with DNA and activate specific oncogenes.

The special hazards value to application in the meal of albumens and meat of animal origin. There is direct dependence between a death rate from cancer of pancreas and level of the use of meats products. And vice versa, there is information about a protective effect in relation to cancer of pancreas fruit are vegetable diets. Value of alcohol in the origin of cancer of pancreas not true.

Whole group of industrial chemical matters promote the risk of development of cancer of pancreas at the protracted production and domestic contact. Among them derivatives of benzidine, beta-naftilamines, metallic dust different solvents and other.

Epidemiology.

Morbidity on the cancer of pancreas grows constantly, especially among men in age 50-60 years. The substantial differences of frequency of morbidity of cancer of pancreas in different countries allowed to bind her to the geographical features and way of life. Yes, morbidity of cancer of pancreas among women in the USA is 8,2, and in Japan only 1,76. Among men morbidity of cancer of pancreas in Japan also the lowest – 2,5; in England, Sweden, Austria – 10,3-10,6; in the USA, Finland – 9-14,1, and on the Hawaiian islands – 31,4. In Ukraine diseases is 10,2. Poltava region one of the greatest indexes has – 15,1 on 100 thousands of population.

Pathoanatomy.

In most cases of malignant tumours of pancreas are adenocarcinomas of the varied degree of maturity, which give early and large metastases in regional lymphatic nodes

(retroperitoneal etc). Most frequent localization of cancer is head of pancreas – 60%, body of gland – 10%, tail – about 5%, total defeat – about 25%.

The cancer of pancreas can develop from glandular epithelium of pancreas, conclusions channels and from the insular tissue Langergatz.

Histological distinguish:

I. Adenocarcinoma:

- Papillary adenocarcinoma is represented by narrow or wide epithelial papillary on connective basis.
- Tubular adenocarcinoma is the ramified tubular structures concluded in stroma.
- Mucoid adenocarcinoma is a tumour contains the far of mucus.
- Glandularsquamous-cell cancer are the mews of tumour contain a lot of mucus.

II. Glandularsquamous-cell cancer.

III. Squamous-cell cancer.

IV. Undifferentiated cancer.

V. Unclassified cancer.

Ways of metastasing of cancer of pancreas

- Lymphogenic – foremost in the lymphonoduss of area of head pancreas, and afterwards in the gate of liver, liver and on peritoneal with appearance of hydroperitoneum.
- Hematogenic – metastasing more frequent in all in lungs, bones, buds, cerebrum. Possible also remote metastases of Virhov's, Schnicler's, Krukenberg's.

Classification of cancers of pancreas

(code of ICD-10 C25.0-2, 8) by system of TNM (6th editions, 2003 years).

TNM Clinical classification

T is the Primary tumour

Tx — it is not enough information for estimation of primary tumour

T0 is a primary tumour does not concerne

Tis — carcinoma in situ

T1 is a tumour is limited by a pancreas, to 2 cm in most measuring

T2 is a tumour is limited by a pancreas, over 2 cm in most measuring

T3 is a tumour directly spreads on any of such structures: duodenum, bilious channel fabrics round a pancreas

T4 is a tumour spreads on any of such structures: stomach, spleen, transverse colon adjoining large vessels.

Note: fat round a pancreas include retroperitoneal fatty, including mesentery, mesocolon, and small epiploons, peritoneum. Direct distribution on bilious channels and duodenum includes the defeat of Vater's nipple. A portal vein abdominal trunk is adjoining large vessels, and also overhead mesenterial and general hepatic to the artery and veins (but not splenic vessels).

N is the regional lymphatic nodes.

Nx — it is not enough information for estimation of the state of regional lymphatic nodes

N₀ — there are no signs of defeat of regional lymphatic nodes

N₁ are the discovered metastases in regional lymphatic nodes

N_{1a} it is metastasis in an unique regional lymphatic nodes

N_{1b} are metastases in numerous regional lymphatic nodes

M is the Remote metastases

Mx — it is not enough information for determination of remote metastases

M0 are remote metastases do not concerne

M1 is present remote metastases

Clinic.

Early symptoms of cancer of pancreas heterospecific are pains in a epygastric area, weightlose, aching pains in the back. Tromboflebitis of migrant character can be the first display of cancer of pancreas (approximately in 10% patients).

Symptoms which appear during the review of patients depend on localization of tumour in a pancreas.

- Head of gland. In more frequent all the cancer of pancreas develops in its head (50-80%). At this localization of tumour in 75% patients weightlose and mechanical icterus which appears without a sickly attack is basic symptoms, although approximately in 25% patients with localization of tumour in the head of pancreas there are forthcoming pains and indefinite discomfort in an epigastrium. At presence of tumular formation that palpate, (tumour of head of pancreas) approximately in 20% cases it is already possible to talk about inoperableness. If a tumour is multiplied in sizes and a megascopic painless gall-bladder (symptom of Kurvasie's) concerns at palpation, it costs to assume the tumour obstruction of pancreatitiss and/or bilious channels. Thus a gall-bladder palpable less than in 50% patients.
- The cancer of body or tail of pancreas meets rarer and appears on late stages, as the tumours of such localization cause a mechanical icterus only in 10% cases. As a pancreas is located retroperitoneal, exposure of its tumours on early stages at the physical inspection laboured and becomes possible at the considerable sizes of tumour (tumular formation palpable in a epygastral area) or at the metastases.

Diagnosis.

It is considered that screening inspection of patients with the purpose of exposure of cancer of pancreas on early stages not justified, as tumours accessible for screening diagnostics, as a rule, already non curable.

Non invasive diagnostic methods:

- ultrasonic and CT
- Sciagraphy.

Invasive diagnostic methods:

- percutaneous aspiration biopsy
- endoscopic retrograde biopsy.
- percutaneous transhepatic holangiography effective at the inspection of patients with a mechanical icterus.
- laboratory researches. In 80% patients overactivity of alkaline phosphatase in a whey, that conditioned by the compression of pancreatitis part of general bilious channel. Often mark the increased levels of CEAg, LDG and whey glutamyltransferase. Find out an icterus in 65% patients, and in 25% are high levels of amylase of whey. It is found out of tumour marker of CA19-9 and cancer of pancreas (the sensitiveness of this test for carcinomas of pancreas is 80%, and specificity - 90%).
- angiografy can find out a change or compression of pancreatic artery or artery of duodenum. A phleboid phase can be especially informing at corking of overhead mesenteric or splenic veins.

Treatment.

- Surgical methods:

- ✓ A pancreatoduodenal resection (operation of Wiphle) at resectable tumours is the standard method of surgical treatment of adenocarcinoma of head of pancreas. Set resectableness of tumour on an operating table on a few criteria.

Absence of metastases in a liver. A tumour does not growth gate livers, portal vein behind a pancreas, region of upper mesenteric artery and other organs of abdominal region.

Histological confirmation of malignisation of tumour can be got by the puncture aspiration biopsy executed or during operation.

Operation of Wiphle includes the delete of head of pancreas, duodenum, distal part of common bilious channel gall-bladder and distal portion of stomach. Renewal of communicating of gastrointestinal tract is carried out by forming of gastroenterostomy, holecystoenterostomy and pancreatoenterostomy. Operating lethality here large operative interference high and makes near 15%. Frequency of origin of complications is high also enough. Most frequent complications is bleeding, forming of abscess and insolvency of pancreatoenterostomy.

- ✓ Left-side hemipancreoectomy with a splenectomy and lymphadenectomy is executed at localization of tumour in a middle bodypart and in the area of tail of gland.
- ✓ pancreoectomy was also offered for treatment of cancer of pancreas, although this operation did not acquire wide distribution. After pancreoectomy there is the especially heavy form of saccharine diabetes that worsens the internalss of life of patient after operation.

- ✓ Palliative operations at the cancer of pancreas execute more frequent, than radical, because more greater part of the diagnosed tumours of pancreas is already inoperable. Palliative operations are the obstacles to the outflow of bile directed on the removal, for what impose decompressive inosculation between gastrointestinal tract and either gall-bladder or general bilious channel.
- A chemotherapy in treatment of cancer of pancreas was used widely enough. Complex charts of application of preparations, which include 5-FU, cause the temporal diminishing of tumour in sizes, but does not multiply life-span.
- Radial therapy diminishes the sizes of tumour education in 60-70% patients, possibly its use in quality a palliative method. By illnesses and states, which attract there is diabetes, chronic pancreatitis operations on a stomach.

Prognosis.

For patients with adenocarcinoma of pancreas prognosis extremely unfavorable, and the 5-years-old survival is 5%, cases of curing very rare. More greater part of patients dies during 1 year after operation. Mean time of life of patients with inoperable tumours makes 6 months. Even at patients with the resectable tumours of pancreas efficiency of operative treatment low. Only 10% patients after a pancreatectomy live more than 5 years.

3.3. Recommended literature:

а) Basic

1. Б.Т. Білінський, А.І. Гнатишак “Oncology”, 1992р.
2. Oncology / For ред Б.Т. Білінського, Ю.М. Стернюка, Я.В. Шпарика. it is Lvov: World medicine, 1998. - 272с.
3. Oncology / after the release of В.П.Баштана, А.Л.Одабашьяна, П.В.Шелешка is Тернопіль, - 2003
4. Oncology. After ред. В.П. Баштана, А.Л. Одабаш'яна, П.В. Шелешка. it is Тернопіль: Укрмедкнига, 2003. – 313 с.
5. Oncology. After ред. Б.Т. Білінського, Ю.М. Стернюка, І. Ін. Шпарика. it is Kiev: Health, 2004. – 527 с.

б) Additional

1. Справочник онкологии под редакцией ак. Трапезникова Н.Н. is Медиа. - 1996г. 624с.
2. Хендерсон Д.М. “Патофизиология органов пищеварения”. - L-R New –York. - 1997. – 284с.
3. А.М. Гарин, И.С. Базин “Cancer of поджелудочной железы (значение, проблемы, возможности лечения)”, 2001.

в) Methodical

В.Є. Мілерян. are Methodical bases of preparation of leadthrough of lessons in medical institutes of higher (methodical manual).- Kiev, Хрещатик. – 2003. – 80с.

3.4. Materials for self-control

A. Questions for self-control

1. What place occupies the disease on the cancer of pancreas among all oncopathology (separately at women and men)?
2. Blood supply of pancreas.
3. Lymph flow.
4. What histological structure of tumours of pancreas meets more frequent in all?
5. What type of treatment is used at the tumours of pancreas?
6. In what organs more frequent in all метастазує the cancer of pancreas?
7. On the basis of what inspections is it possible to diagnose “cancer pancreas”?
8. As is a duodenography executed?
9. Name general symptoms characteristic for new formations of pancreas.
10. What does a prognosis depend from at patients with the cancer of pancreas?

B. Tests initial level of knowledges on a theme: “Cancer of pancreas”

1. What anatomic departments does a pancreas have?
 - a) Head, body, tail.
 - b) Head, body.

2. What arteries supply pancreas?
 - a) Hepatic general artery splenic artery.
 - b) Hepatic general artery, splenic and upper mesenteric artery.

3. In what stages of development more frequent in all are new formations of pancreas diagnosed?
 - a) II, III
 - b) III, IV

4. What place among new formations of digestive channel occupies the cancer of pancreas?
 - a) 3.
 - b) 4.
 - c) 5.

5. What symptom more frequent in all meets at the cancer of head of pancreas
 - a) Pain.
 - b) Icterus.
 - c) Nausea and vomits.

6. What symptom more frequent in all meets at the tumours of body of pancreas?
- a) Icterus.
 - b) Pain.
7. What ways of metastasing of cancer of pancreas?
- a) Hematogenic.
 - b) Lymphatic
 - c) Contact
 - d) All are above enumerated.
8. In what organ more frequent in all metastasing the cancer of pancreas?
- a) Liver.
 - b) Kidneys.
 - c) Lungs.
9. What radical methods of treatment of cancer of pancreas?
- a) Surgical
 - b) Radial
 - c) Chemiotherapy
 - d) 2 and 3.
10. What volume of surgical interference at the tumour impression of head of pancreas?
- a) Resection of area of gland, that is staggered by a tumour
 - b) Pancreoduodenal resection
 - c) Pancreoectomy.

B. Situational tasks for self-control.

Task № 1.

To the polyclinic a patient appealed 55p., with complaints about weightlose, bad appetite, permanent pain in a epigastric area, that give in the back. At the roentgenologic inspection of gastroenteric highway it is found out chronic gastritis. At gastroscopy it is found out gastritis. Enzymes of pancreas in a norm. The blood test is general: RBC $3,8 \times 10^{12}/l$, WBC- $6,2 \times 10^9/l$, E –10%, S- 69%, lymph. -22%, m - 6%, ESR 42 mm/hour. The uranalysis is a normal. An irrigoscopy is a norm. About what oncologic disease is it possible to think at a patient? What additional researches are needed for clarification of diagnosis?

Standard of answer:

1. Cancer of body of pancreas.
2. Computer tomography.

Task № 2.

A patient 62 years appealed to the internist on an occasion pain in right hypochondrium, general weakness, bad appetite, itch of skin. Objectively: the patient of mionectic feed, skin and scleroticas, is icteric, stomach soft, in right hypochondrium is felt elastic, rounded form of formation size 6x8 cm, slightly painfully, urine of dark color, excrement colourless. What previous diagnosis? What types of icterus does it follow to differentiate? What more frequent in all causes a mechanical icterus?

Standard of answer:

- 1.Mechanical icterus.
- 2.Mechanical, parenhimal, hemolytic icterus.
- 3.More frequent all is cancer heads of pancreas and cholelithic illness.

Task № 3.

The sick 46 years appealed to the internist on an occasion turning yellow of skin and scleroticas, and also sharp weakness, bad appetite. Objectively: expressive icterus of skin, scleroticas, weightlose, urine of dark color, colourless excrements. The sick is hospitalized in the infectious department where was 2 weeks. Infectious hepatitis was eliminated. An icterus did not disappear, the itch of skin appeared. The state became worse. Analysis of blood: RBC: $3,5 \times 10^{12}/l$, WBC – $4,2 \times 10^9/l$, ESR-48 mm/hour. Previous diagnosis? As to specify a diagnosis?

Standard of answer:

- 1.Cancer of head of pancreas.
- 2.Echography of abdominal region, computer tomography diagnostic laparotomy.
Determination in the blood of transaminases, aldolase, maintenance of bilirubin blood.

Task № 4.

At a patient 65 years the cancer of body of pancreas is diagnosed. Disturb strong pain in the epigastral area of circular character, there is sharp weightlose. Plan of treatment.

Standard of answer: The leadthrough of palliative course of radial therapy chemotherapy is rotined.

Task № 5.

At sick 45 years a mechanical icterus on the basis of tumour of head of pancreas lasts near 4 months. A surgeon plans operation of imposition of roundabout bilio - digestive anastomosis. What complications can arise up in an early period after operation and as to warn them ?

Standard of answer: Cholemic bleeding and insufficiency of stitches of inosculation as a result of decline of reactivity of organism. At preparation to operation it is necessary to appoint Vikasol, vitamins, preparations of calcium.

Task № 6.

To the oncologist a patient is directed 56 years on an occasion a mechanical icterus and palpate tumour size 8x7 cm in a epigastral area. At the inspection of stomach and colon found out the tumour of colon with the phenomena of colon stenosis. Diagnosis. Than to account for a mechanical icterus? Plan of treatment.

Standard of answer:

1. Cancer of colon with metastases in a liver.
2. Metastases are the livers located in a gate, causing the complete clench of biliferous ways.
3. With a palliative purpose resection of colon.

Task № 7.

To the clinic a woman acted 56 years with complaints about a general weakness, bad appetite, rapid fatigueability, dull pains in right hypochondrium and weightlose. These symptoms appeared 9 months ago, and 3 weeks ago is turning yellow of skin, itch. At a review on a skin tracks of combing, a stomach not is blown away, the soft, lower edge of liver comes forward on 2 fingers from under a costal arc, from under a liver elastic littersickly formation comes forward size 6x8 cm. Uanalysis: saturated dark color, specific gravity - 1020, an albumen cillindres, WBC-2/3 in eyeshot, bilious pigments - sharply positive, urobilin is negative. At roentgenoscopy of organs of thorax in the overhead fate of right lungs found out shade of the rounded form size 3x4 cm. Diagnosis. What methods of research does it follow to apply, to make sure in mechanical character of icterus? Plan of treatment. What researches does it follow to conduct to the patient at presence of at him icteruses? What value of cholecystography?

Standard of answer:

1. Cancer of head of pancreas with metastases in a right lung. Mechanical icterus.
2. At the hemanalysis for a mechanical icterus characteristically increase of direct bilirubin.
3. Symptomatic. Rotined operation with imposition of biliodigestive anastomosis.
4. Blood test on bilious pigments.
5. Cholecystography at a mechanical icterus always negative.

Task № 8.

A patient 45 years appealed with complaints in the presence of icterus, which at first had variable character, and then became permanent, insignificantly expressed anaemia, pain in the area of gall-bladder. Positive symptom of Courvoisier's. In an excrement found out a blood. Then an icterus faded out. About what character of pathological process is it possible to think? What researches does it follow to conduct? Does it eliminate periodic character of icterus blastomatous process?

Standard of answer:

1. It is possible to think about the cancer of head of pancreas and Vater's papilla.
2. For clarification of clinical diagnosis it follows to apply duodenoscopy, computer tomography, echography of abdominal region.
3. Does not eliminate. Periodicity of icterus is at disintegration of tumour of Vater's papilla.

Task № 9.

The sick 70 years acted with complaints about pain in an epigastric area, which give in the back, icterus of skin, itch of skin, head pain enhanceable crossness. Weight loss 10 kg, ill 3 months. Objectively: skin is icteric, a liver comes forward from under a costal arc, palpable megascopic to 15 cm with clear contours painless gall-bladder. Previous diagnosis. Additional methods of research. Plan of treatment.

Standard of answer:

1. Previous diagnosis: cancer of pancreas.
2. Blood pressure, low duodenography scan-out of pancreas.
3. Biliodigestive anastomosis.

Task № 10.

A patient 63 years hospitalized with complaints about strong ones stomach-ache, high temperature, icterus. Anamnesis of disease: 1,5 month ago dull aching pain appeared in right hypochondrium. Appealed to the doctor month ago, when the icteric of skinning cover appeared, the temperature of body rose. A patient was hospitalized in the infectious department. After 3 months of stay in the department at a patient suddenly arose up strong stomach-ache, temperature to 40°C. Consulted by a surgeon and hospitalized in the surgical department. Objectively: skin is icteric. In right hypochondrium a gall-bladder painless, palpable, with clear contours, the symptoms of irritation of peritoneum are absent. Previous diagnosis? Additional methods of research? Tactic of doctor?

Standard of answer:

1. Cancer of extrahepatic bilious channels.
2. Retrograde endoscopic pancreocholangioscopy.
3. Laparotomy with the subsequent decision of question about the choice of operation.

5. MATERIALS OF AFTERAUDITORY INDEPENDENT WORK.

1: Study of indexes of morbidity and death rate on the cancer of liver in 2003 in the Poltava region.

2: Study of possible dependence of increase of level of morbidity on the cancer of liver in the Poltava region from contamination of external environment.

**Methodical development is revised and ratified on meeting of department
Protocol №2 08.09.2008 year.**

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