An anatomical illustration of the pancreas and its associated blood vessels and ducts. The pancreas is shown in a yellowish, textured appearance, with a network of red and blue blood vessels and a yellow duct system. The background is a dark, blue, textured surface.

**ACUTE DEGENERATIVELY-INFLAMMATORY  
DISEASE OF THE PANCREAS, WITH UNDERLYING  
AUTOLYSIS OF PANCREATIC TISSUES BY PROPER  
ACTIVATED ENZYMES WITH SUBSEQUENT  
DEVELOPMENT OF ASEPTIC AND  
MICROBE INFLAMMATION**

# **ACUTE PANCREATITIS**



# ACUTE PANCREATITIS EPIDEMIOLOGY

SPECIFIC RATIO AMONG ACUTE  
SURGICAL PATHOLOGY OF  
THE ABDOMINAL CAVITY -

**6 – 9 %**

LETHALITY AT  
DESTRUCTIVE FORMS -

**20 – 40 %**

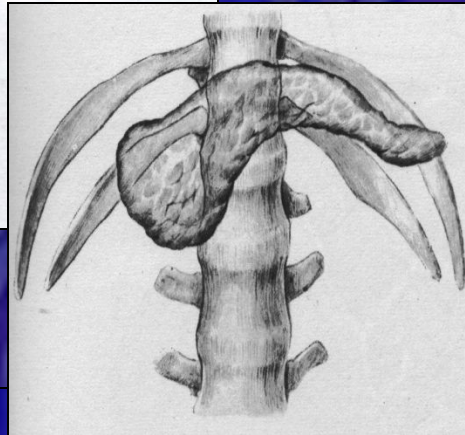
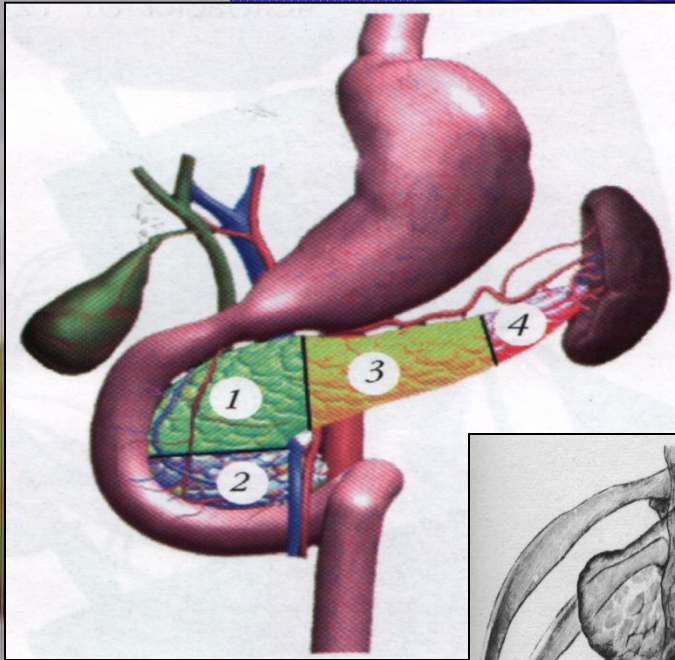
LETHALITY AT  
DESTRUCTIVE FORMS  
WITH COMPLICATIONS -

**до 80 %**

**RESULTS OF TREATMENT**







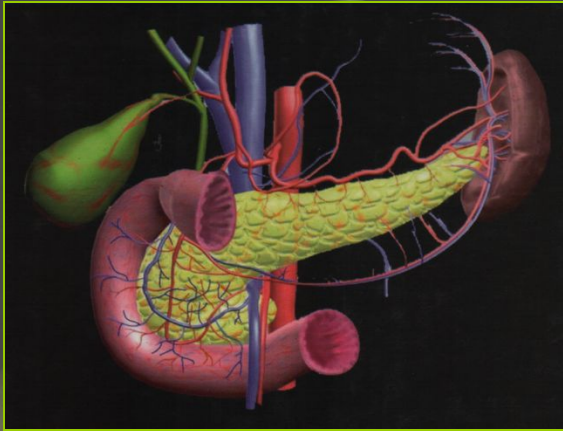
**ANATOMO-  
TOPOGRAFIC  
DATA OF  
THE PANCREAS**

**LOCATED RETROPERITONEALLY,  
BEHIND THE STOMACH  
AT L<sub>1</sub> – L<sub>2</sub> LEVEL**

**LOCATED HORIZONTALLY  
FROM RIGHT TO LEFT  
RENAL AREAS,  
FROM DESCENDING PART  
OF THE DUODENUM  
TO THE SPLEEN**

**DIVIDED INTO 4 PARTS:**

**HEAD;  
ISTHMUS;  
BODY;  
TAIL**



## EXOCRINUS FUNCTION OF THE PANCREAS

**PROTEOLYTIC ENZYMES** - TRIPSIN,  
CHYMOTRIPSIN, KARBOXYPEPTIDASE,  
ELASTASE ( ARE EXCRETED IN INACTIVE STATE  
AND THEIR ACTIVATION OCCURS UNDER THE INFLUENCE  
OF DUODENUM ENTEROKINASE)

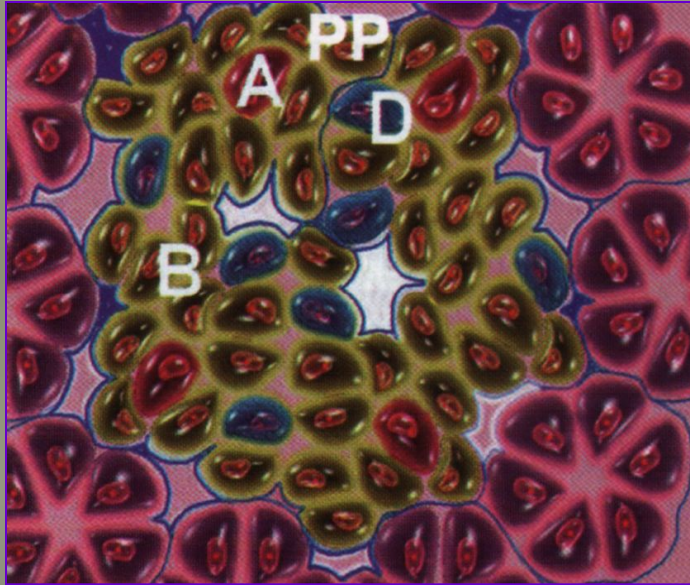
**LIPOLYTIC** – LIPASE, PHOSPHOLIPASE A AND B  
(ARE ACTIVATED BY BILE ACIDS, HISTIDINE)

**GLYCOLYTIC** – AMILASE, INVERTASE  
(ARE EXCRETED IN AN ACTIVE STATE )

**SECRETION INHIBITORS** – GLUCAGON, SOMATOSTATIN, PANCREATIN,  
VASOPRESSIN, ADRENALIN, PROSTAGLANDINS, HYPOGLICEMIA. MOST OF  
INHIBITORS ARE EXCRETED BY THE PANCREAS ITSELF.



# SECRETORY FUNCTION OF THE PANCREAS



IS REALISED BY  
 $\alpha$ ,  $\beta$  AND D CELLS  
IN ISLETS OF LANGERHANS  
(PANCREATIC HORMONES  
TAKE PART  
IN REGULATION OF LIPID  
AND CARBOHYDRATE  
METABOLISM)

$\beta$  - CELLS EXCRETE INSULIN

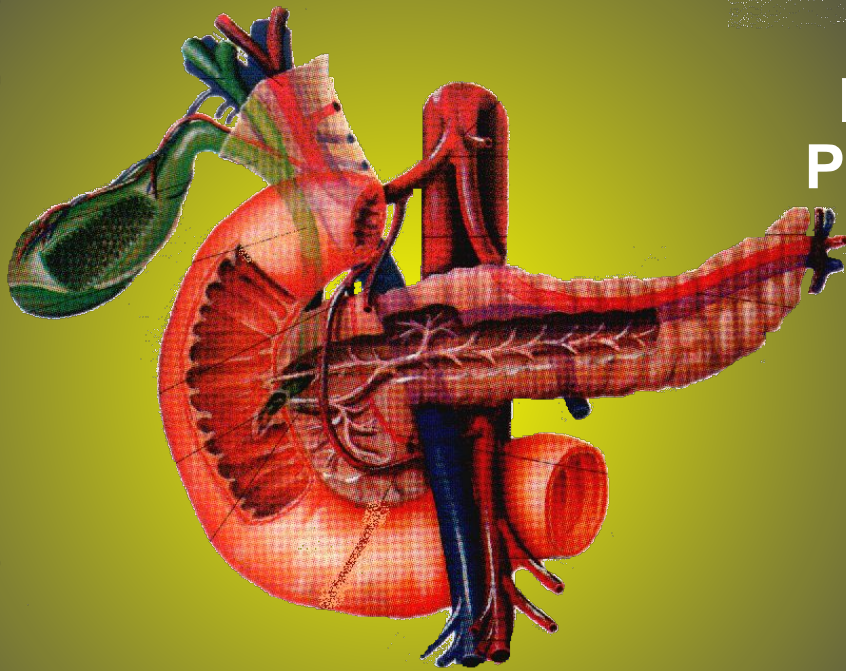
$\alpha$  - CELLS EXCRETE GLUCAGON

D - CELLS EXCRETE LIPOCAIC

# PATHOGENESIS OF ACUTE PANCREATITIS AND ITS COMPLICATIONS

LEADING HAND IN ACUTE PANCREATITIS PATHOGENESIS BELONGS TO PANCREATIC EZYMES

ELEVATION OF INTRADUCTAL PRESSURE WITH CYTOKINASE OUTLET AND TRIPSPIN ACTIVATION, REFLUX OF BILE INTO PANCREATIC DUCT WITH LIPASE ACTIVATION



# FORMS OF ACUTE PANCREATITIS

**EDEMATIC**

**NECROTIC**

**COMPLICATED**

**FATTY  
PANCREONECROSIS**

**HEMORRHAGIC  
PANCREONECROSIS**

## SPREAD OF THE PROCESS

**LOCAL INJURY  
OF THE PANCREAS**

**SUBTOTAL INJURY  
OF THE PANCREAS**

**TOTAL INJURY  
OF THE PANCREAS**

# Classification adopted in Atlanta (1992)

## ACUTE PANCREATITIS

**A – mild**

**Б – severe**

- 1. Acute interstitial pancreatitis.**
- 2. Necrotic pancreatitis:**
  - a) aseptic pancreonecrosis;
  - б) infected pancreonecrosis.
- 3. Parapancreatic fluid accumulation:**
  - a) sterile;
  - б) infected.
- 4. Pseudocyst of the pancreas.**
- 5. Abscess of the pancreas.**



**PERIODS  
OF ACUTE  
PANCREATITIS  
COURSE**

**PERIOD OF HEMODYNAMIC  
VIOLATIONS AND PANCREATIC SHOCK**  
(FROM SEVERAL HOURS TO 3-5 DAYS  
AND MANIFESTS BY TOXEMIA,  
HEMODYNAMIC AND  
MICROCIRCULATIVE DISORDERS)

**PERIOD OF FUNCTIONAL INSUFFICIENCY  
OF PARENCHYMATOUS ORGANS**  
(BEGINS FROM 3-7 DAY AND  
MANIFESTS BY VIOLATION OF  
VITAL ORGANS FUNCTION –  
MULTIPLE ORGAN FAILURE)

**PERIOD OF DYSTROPHIC AND  
PURULENT COMPLICATIONS**  
(BEGINS ON 10-14 DAY  
FROM THE ONSET OF THE DISEASE AND  
MANIFESTS BY DEVELOPMENT OF  
LOCAL POSTNECROTIC PROCESSES)

# SYSTEMIC MANIFESTATIONS OF ACUTE PANCREATITIS

## CARDIOVASCULAR

SHOCK, ARRHYTHMIA, TACHYCARDIA,  
HYPOTENSION, EXTRAVASCULAR  
FLUID SEQUESTRATION

## PULMONARY

RESPIRATORY, DISTRESS-SYNDROME,  
PLEURITIS, PNEUMONIA,  
ATELECTASIS

## HEPATIC

JAUNDICE, HYPERFERMENTEMIA

## ABDOMINAL

ENTEROPARESIS,  
FERMENTATIVE PERITONITIS

## RENAL

ASOTEMIA, OLIGURIA

## HEMORRHAGIC

DIC-syndrome, GIT BLEEDINGS,  
THROMBOEMBOLISMS

## METABOLIC

HYPERGLYCEMIA,  
HYPOCALCEMIA, ACIDOSIS

## NEUROLOGICAL

TOXIC ENCEPHALOPATHY



# DIAGNOSTICS OF ACUTE PANCREATITIS

**CLINICAL PRESENTATION** (COMPLAINTS, ANAMNESIS, OBJECTIVE DATA)

## LABORATORY METHODS OF DIAGNOSTICS

### CLINICAL BLOOD EXAMINATION

(leukocytosis with deviation of the differential count to the left, lymphopenia, lowering of eosinophils, Ca, high blood sugar – unfavorable prognostic factors )

### SERUM AMYLASE -

Severity of the process is proportional to amylase elevation. (at necrosis of the pancreas this index lowers)

### AMYLASE CLEARANCE/CREATININE

**CLEARANCE** (coef.  $> 5$  – Sign of acute pancreatitis)

**A DIAGNOSIS OF ACUTE PANCREATITIS MUST BE VERIFIED DURING THE FIRST 2 DAYS OF A PATIENT'S HOSPITALIZATION INTO THE SURGICAL DEPARTMENT**

## INSTRUMENTAL METHODS OF DIAGNOSTICS

**ULTRASOUND OF THE PANCREAS, GALLBLADDER AND LIVER**

### RONTGENOLOGIC METHODS OF DIAGNOSTICS

(changes in abdominal and thoracic cavities )

**COMPUTER TOMOGRAPHY**

**LAPAROSCOPY**

# PRINCIPLES OF CONSERVATIVE TREATMENT

## SURGICAL DEPARTMENT

## RESUSCITATION DEPARTMENT

## COMPLEX PATHOGENETIC TREATMENT

- **REDUCTION OF PAIN** (nonnarcotic analgesic, spasmolytics, novocaine block, synthetic narcotic analgesics, extended peridural anesthesia)
- **DEPRESSION OF THE PANCREAS AND GASTRIC SECRETION** (starvation during first 3-4 days, cold, aspiration of gastric contents, hypothermia, drug block of the pancreas and stomach secretion (anticholinergic drug, 5- fluorouracil, sandostatin)
- **ENZYMES INACTIVATION** OF THE PANCREAS IN THE BLOODSTREAM (CONTRICAL, GORDOX)
- **CORRECTION OF VOLEMIC DISORDERS** (INFUSION THERAPY)
- **DISINTOXICATION THERAPY** (forced diuresis, extracorporal methods)
- **ANTIBACTERIAL THERAPY AND PROPHYLAXIS**
- **NUTRITIOUS SUPPORT** (adequate parenteral and early – through the probe – enteral feeding)
- **SYMPTOMATIC TREATMENT**



## PRINCIPLES OF SURGICAL TREATMENT:

- Are defined by dynamics of pathomorphologic process in the pancreas, retroperitoneal tissue and abdominal cavity;
- methods of drainage operations are underlying .

## *METHODS OF DRAINAGE OPERATIONS*

1. «closed»
2. «open»
3. «half-open»

