



, 2015

1.	.....	1
1.1.	.....	4
2.	.....	10
2.1.	.....	10
2.2.	.....	12
2.2.1.	.....	19
2.2.2.	.....	22
2.3.	.....	22
2.4.	.....	25
2.5.	.....	36
2.5.1.	() –	
	peritoneocentesis.....	36
2.5.2.	().....	38
2.5.3.	().....	40
2.5.4.	.....	42
2.5.5.	.....	44
2.6.	.....	44
2.6.1.	.....	46
2.7.	.....	51
2.7.1.	.....	53
2.7.2.	.....	52
2.7.3.	.....	53
2.7.4.	.....	54
2.7.5.	–	54
2.7.6.	.....	55
2.7.7.	.....	57
2.7.8.	58
2.7.9.	59
2.7.10.	60
2.7.11.	–	60
2.7.12.	61
2.7.13.	62
2.8.	a	64
3.	67

4.	68
5.	71
6.	102
7.	123
8.	126

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17.

8.

10%,

9,10,11

12,13

(rgan Injury Scaling Comitee of the American
Assotiation for the Surgery of trauma – **AAST**) 1989. 1994.

14,15,16

17,18

19

70%

20,21,22

: **ISS** (Injury Severity Score) **P.A.T.I.**

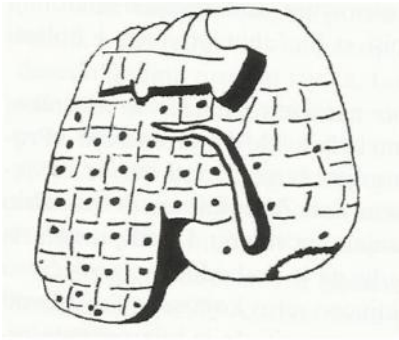
(Penetrating Abdominal Trauma Index) . ISS

P.A.T.I.

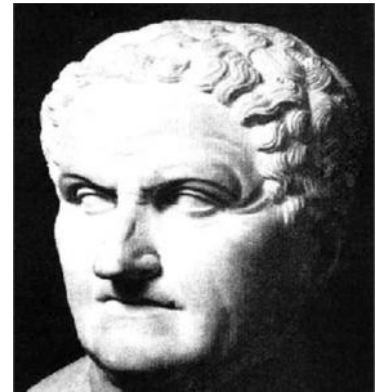
23,24

1.1.

(19. . .)



. 1



. 2 Claudius Galenus

1894).

(Ponfick, 1889; Von Meister,

Galen (130-200.

). Leonardo da Vinci

arcello Malpighi 1666.

„De hepate“

25

Francis Glisson

, 1654.

„Anatomia Hepatis“,



. 3 Francis Glisson



. 4 James Cantlie

Francis Kiernan 1883.

19.

James Cantlie

VCI,
Cantlie-va .

Fabricus Hildanus, “ “ 17.

, Giovanni Berta 1716.

. Elliot 1897.

”

“.

Carl von Langenbuch 1888.



. 5 Carl von Langenbuch



. 6 James Hogarth Pringle

H. Lucke 1981.

, W.W. Keen
1891.

Walter Wendell i Hans von Haberer
Cantli-evu

20.

James Hogarth Pringle,

, 1908.

(„inflow“)

Claude Couinaud,

1957.

Etudes anatomiques et chirurgicales“

20.

Couinaud 1981.

VCI

„ Le Foie:



. 7 Claude Couinaud



. 8 Thomas Starzl

N.A.Goldsmith i R.T.Woodburne 1957.

„ “

:

Thomas Starzl,

1963.

1968.

. Henri Bismuth

Couinaud-ov

„in situ“

Golsmith-

Woodburn-a „in vivo“

1984.

„reduced-size liver“

. Christoph Broelsch

1991.

20

„living-donor liver“

26.



. 9 Henri Bismuth



. 10 Christoph Broelsch

Couinaud- (FCAT) 1998.
- - ,
2000. (IHPBA)
27.

2.

2.1.

; : **pars hepatica** () -
pars cystica
() - .

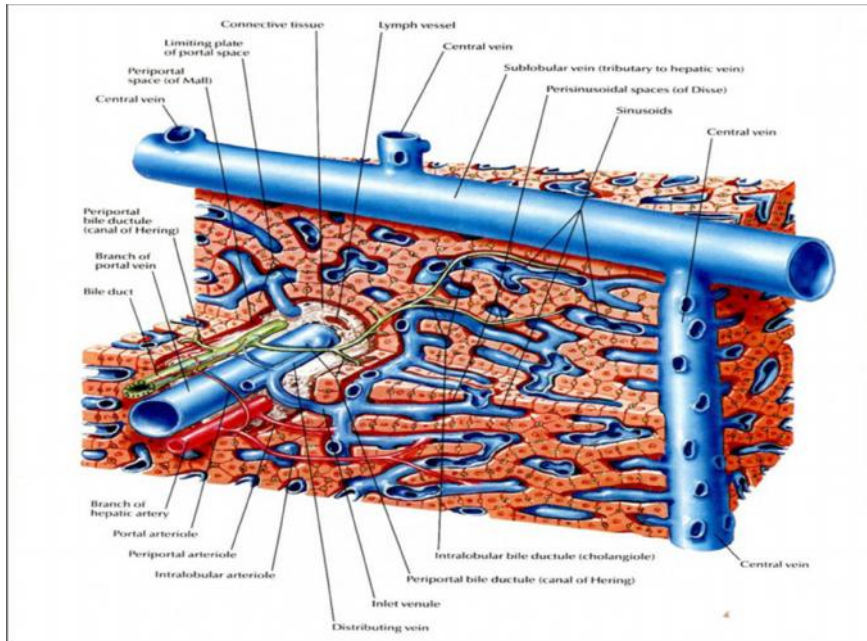
(lobulusi), ,

,
(4-5) (vena
cava inferior).

(ductus hepaticus communis)

(ductus cysticus)

(ductus choledochus).



. 11

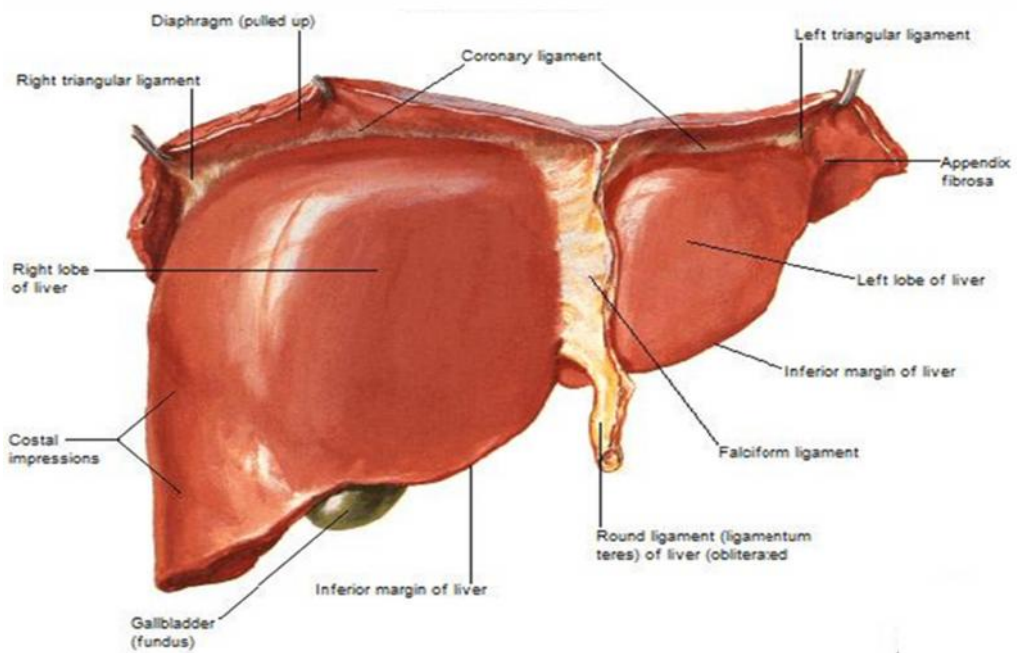
2.2.

“ ”
1500
2,5%
20-23
14-17
()
()

29

(lig.teres hepatis)

„area nuda“,
 (lig.hepatogastricum)
 (lig. hepatoduodenale)
 ;
 (ductus choledochus),
 (a.hepatica), (v.portae).
 „in vivo“
 :
 (facies
 diaphragmatica)
 - ligamentum falciforme hepatis,
 (lobus hepatis dexter) (lobus
 hepatis sinister)³⁰.



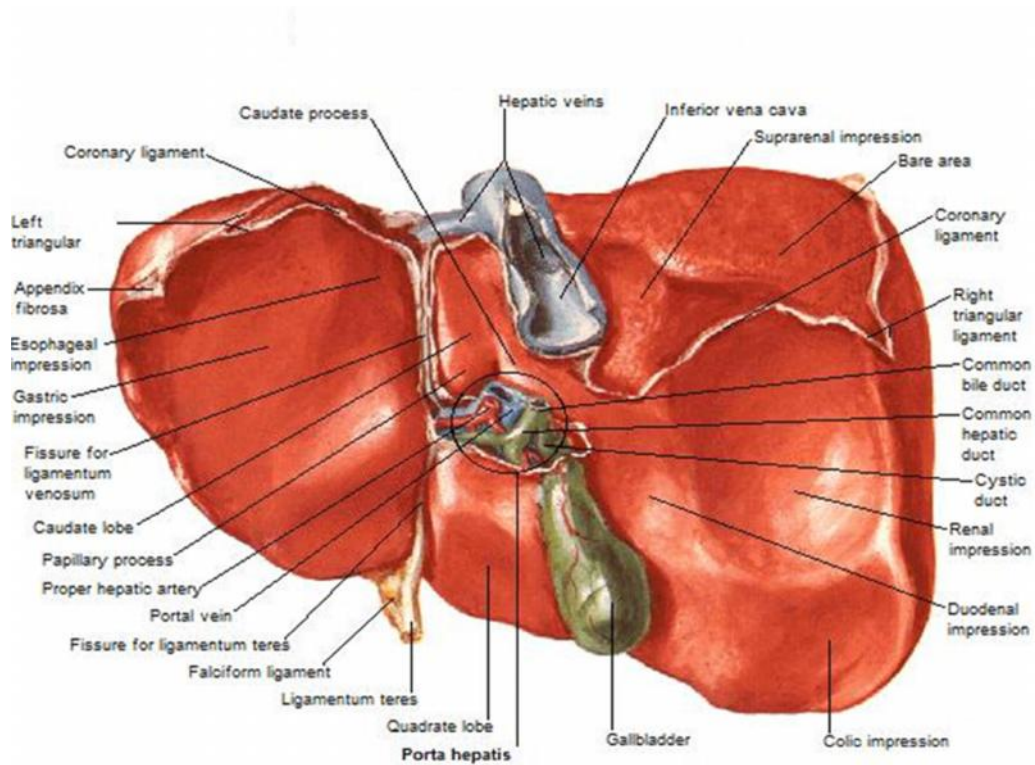
. 12

(facies viscelaris)

H.

billiaris) (fossa vesicae
 (sulcus v. cavae).
 (lig.teres hepatis),
 fissura lig. teretis, (fissura lig.
 venosi).

v.portae .hepatica propria- „inflow“
 „outflow“



. 13

(lobus hepatis dexter)

(lobus quadratus)

(lobus caudatus)

processus caudatus

(lobus hepatis sinister)
(impressio gastrica), (impressio
oesophagealis).

(margo inferior)

(VCI)³¹.

Healey Schroy- , 1953.

Goldsmith Woodburne- , 1957.

Couinaud- , 1957.

. Couinaud

		I	I	I
		II	II	A II III
		III IV	III IVa, Iv	M Me IV
		V VIII	V VIII	V VIII
		VI VII	VI VII	VI VII

. 1. Couinaud-

Bismuth- , 1982.

. Bismuth (hemilivers) .

k .

FCAT , 1998.

1998.

(FCAT) 1998.

Couinaudove

. FCAT

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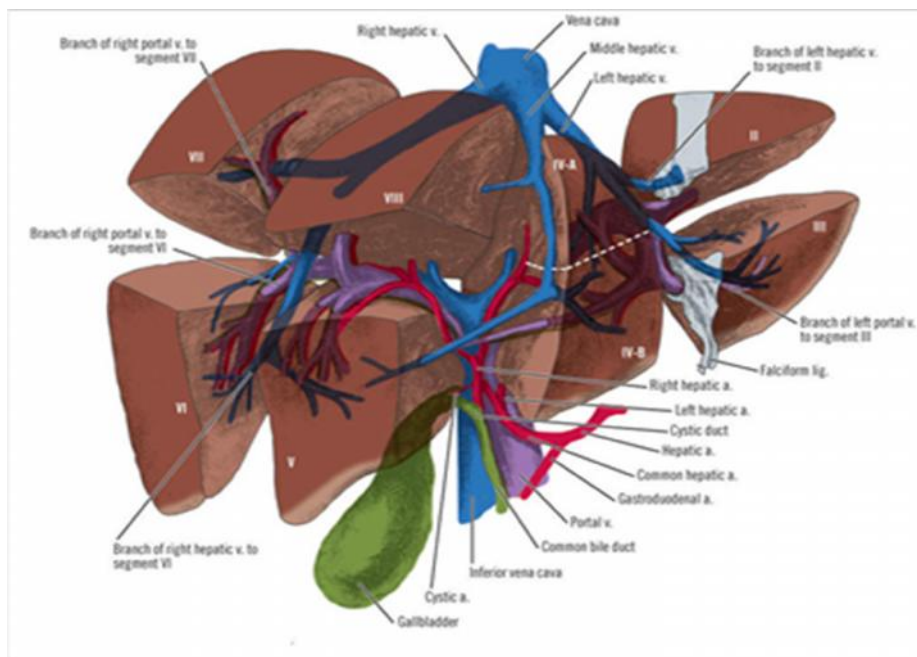
,

, 2000.

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2000.



2.2.1.

portae . hepatica propria, vv. hepaticae. v.

(v. portae hepatis)

,
2/3
,
1/3 ,
,
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,
,
(r.
dexter), (r. sinister).

(arteria hepatis communis)

d. hepaticus-

a. hepatica propria,

80%

(arteria hepatica dextra)

. 20%

5 6

6

7.

(arteria hepatica sinistra)

(

)

4,

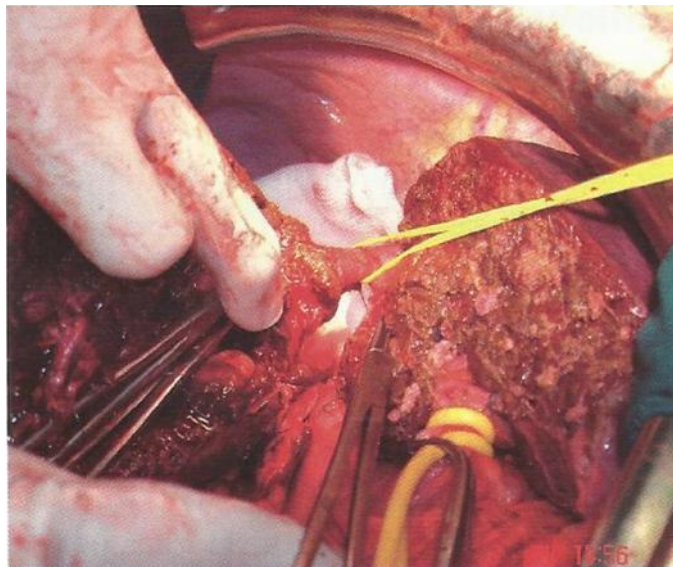
2

3.

k

50%

25%



. 15.

(vv. hepaticae)

(vv. centrales). V. centralis

, v. centralis

v. sublobularis.

vv. hepaticae, v.
cavae inferior. (v. hepatica dextra, v. hepatica
sinistra v. hepatica intermedia)
(v. portae hepatis) (vv. hepaticae)³⁴.

„aree nude“

2.2.2.

7- 10,

3-4

2.3.

35

36

12

()

24 36

28

56 . , 24 ,
10 . 23 . 40 .
37 . - ,

2.4.

(v. cave inferior-VCI).

38

(4 5)

a

Advanced Trauma Life Support (ATLS)

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38

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39

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31

1989. 1994.

(Organ Injury Scaling comitee of the
American Assotiation for the Surgery of Trauma - AAST)

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ST

(LIVER INJURY SCALE)

1994.

1

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3 10 , ,

10 . 3 ,

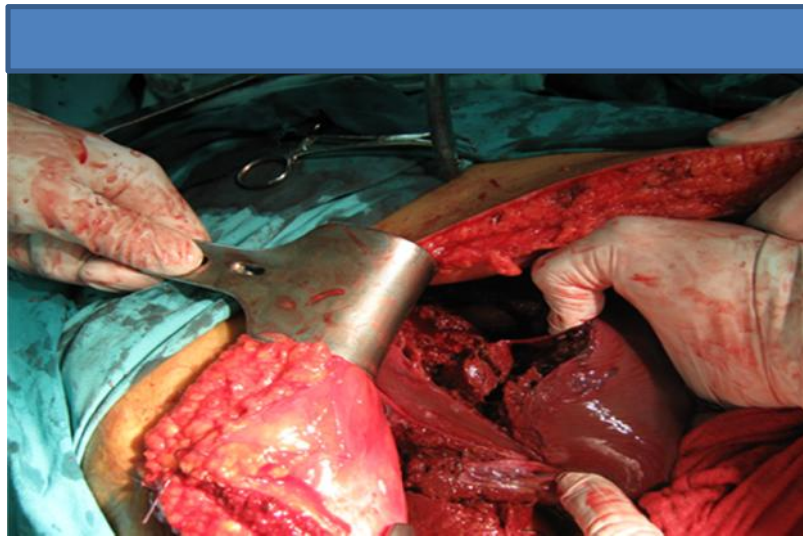
- ;

1-3 ;

(),

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41 .



. 16 IV-V

II, III i IV

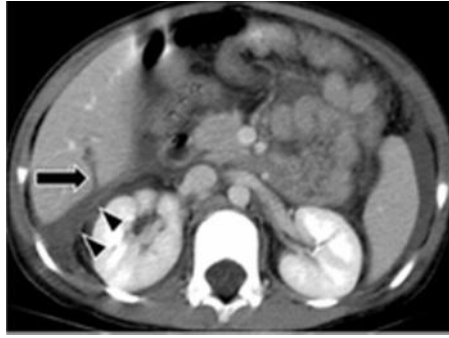
I	, <10%
	, <1
II	, 10%-50% ; - , <10
	1-3 , <10
III	, <50% ; ; >10
	>3
IV	25%-75% 1-3 Couinaudovog .
V	>75% >3 Couinaudovog .
VI	

. 2

(liver injury scale) 1994.



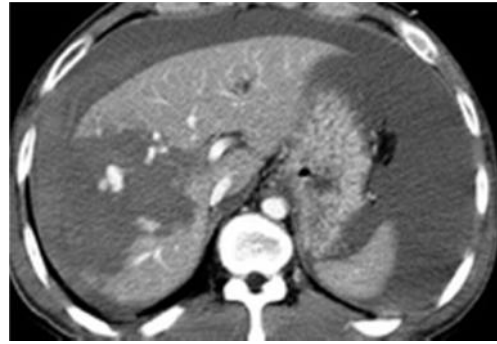
.17 I



.18 II



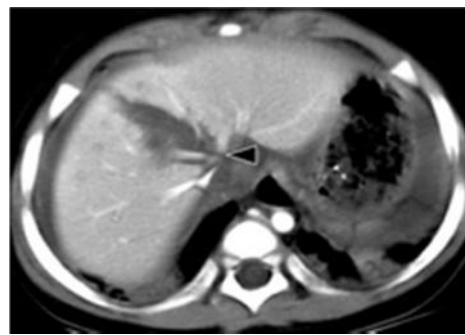
.19 III



.20 IV



.21 V



ISS (Injury Severity Score)
 P.A.T.I. (Penetrating Abdominal Trauma Index) ^{41,42}

ISS, 1974.

AIS (Abbreviated Injury Scale)

1971. Injury Severity Score

75, 0 - 75.

ISS

6,

75.

ISS

25,

70,

100%.

32

29⁴¹.

ISS

$$ISS = AIS(1)^2 + AIS(2)^2 + AIS(3)^2$$

AIS : 1) ; 2) ;

3) ; 4) ; 5) ; 6)

1 2,

1 5.

AIS

AIS :

- I 1
- II 2 ,
- III 3 ,
- IV 4 , .
- V 5 . , , .

P.A.T.I.

- P.A.T.I. .

1 5.

P.A.T.I.

P.A.T.I. . ,
P.A.T.I. , 25.
25
, 60%, 25
5%.

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1 5.
4, 1 5.
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1,
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3,
4.
5.
2.
35%
1
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3.
4-5
25%
4
5
25%
4.
1;
2
25%
3,
-

4 25% , 5

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3 . 1

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4.

5.

1.

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4 .

1,

25%. 25%

2, 3 .

4 ,

5.

1.

1 , 2

. 3,

4 . 5

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2.5.

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1. () -
peritoneocentesis
2. ()
3. ()
- 4.

2.5.1. ()

– peritoneocentesis

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- 1965. ,

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500 0,9% NaCl,

43



. 22, 23 24

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98%

1.

2. ,

3. ,

4. ,

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2.5.2. ()

() ,

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50. ,

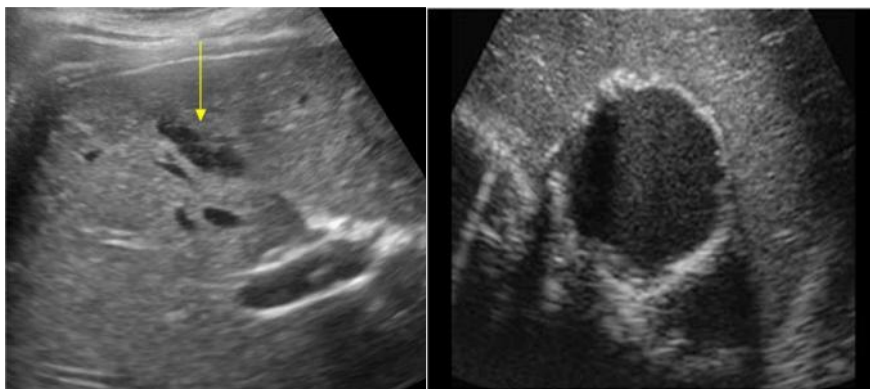
1790. , Lazzaro Spalanzani

, ” “ . ,

, 200

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87,5%,
45
95% - 99,7% 61% -
46
25 26 -



.25 26 -

2.5.3.

()

()

80-

,

92-97%

98,7%,

46

-

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47

follow-ov

(

,)

7,4%

IV V

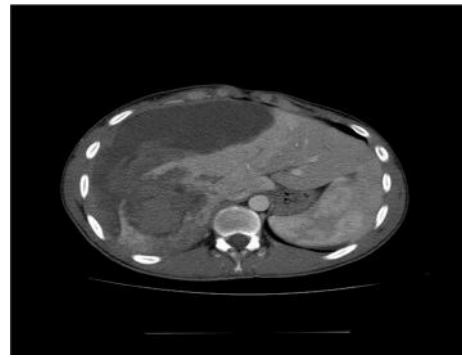
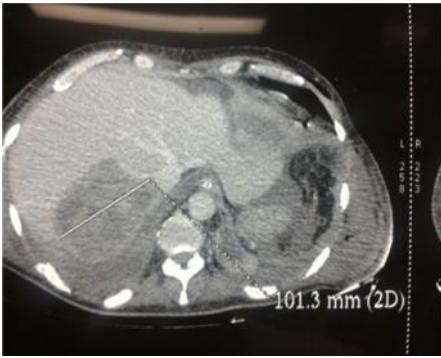
,

,

5- 7

48,49

50



. 27

. 28

5, 6 7 .
130

, ,
. 10

2.5.4.

90-

p

1988.

A. Cuschieri

51

20%

47

III - V 40%
5 - 10%

3-6

52



. 29 30 -

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54 .

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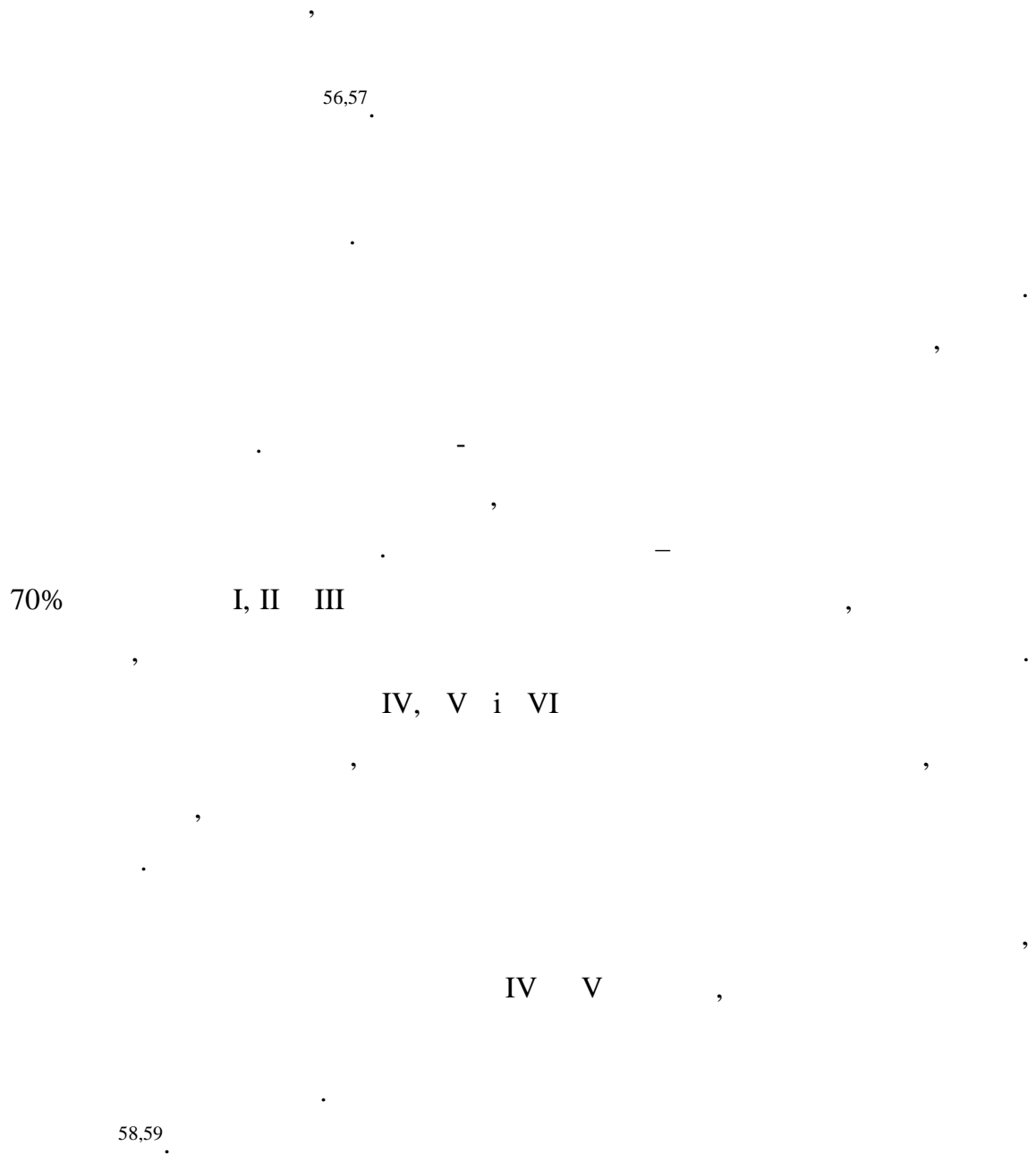
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55 .

2.6.1.





. 32

V, VI VII ,

49 , , ,
 - , 3 8 .

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60 .

65%

61,62 .

, , - : ,
 , -

12-24

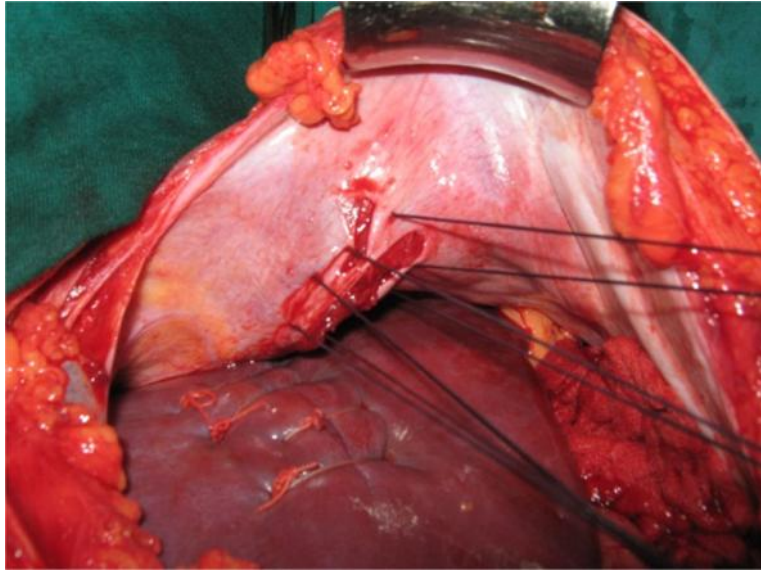
63

43%

64

(97%),

65



.33

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67%

,

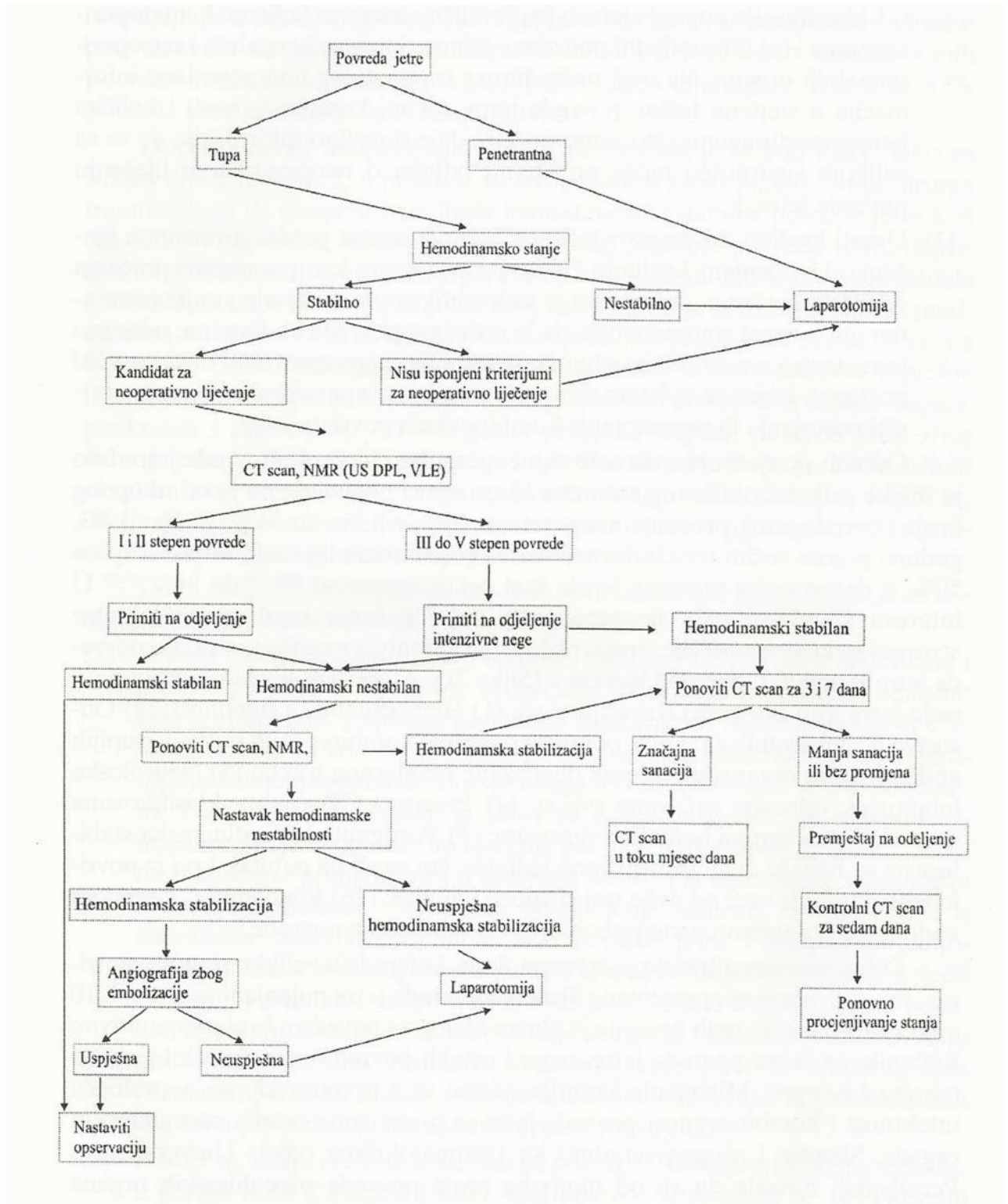
,

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66

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2008.



2.7.

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67 .

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2.7.1.

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, . , (,) , () , 68,69 .

2.7.2.

, , , , , () .

2.7.4.

72

1 2

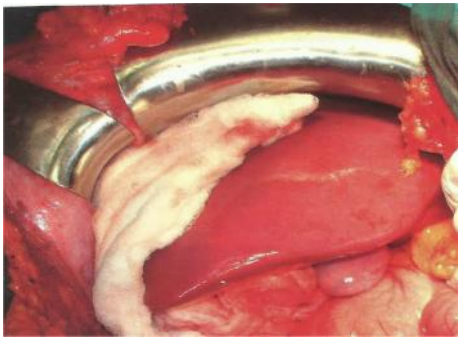
2.7.5.

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· - ,
, 73 .

2.7.6.

(„perihepatic packing“)

” “
·
· ,
,
·



.35



.36

()

().

:

74,75

control“,

2.7.7.

(5)

(Surgycel, Fibrospun)



.37

2.7.8.

(„finger fracture technique“)

1958.

(zero blood loss hepataectomy).

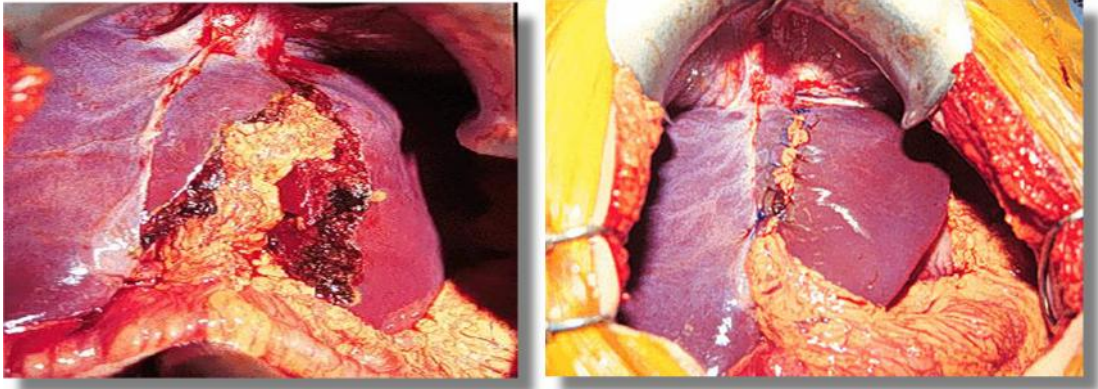
77

2.7.9.

1975.

:)

78



.38 39

2.7.10.

e.

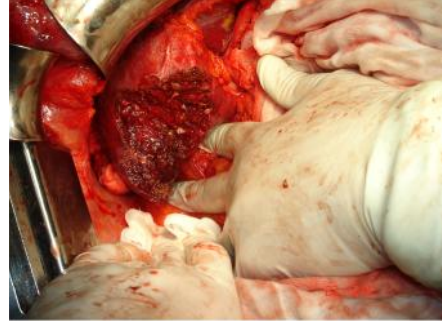
64

2.7.11.

65



. 40. 41.

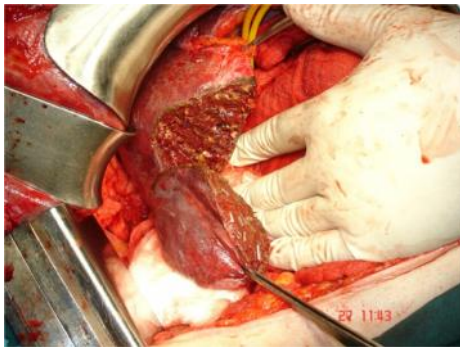


-

2.7.12.

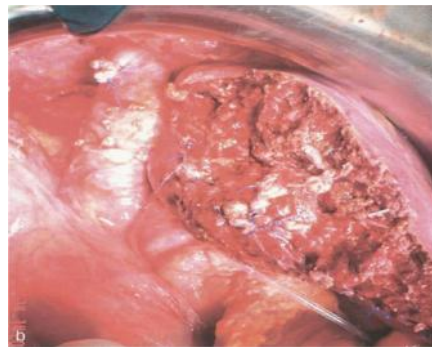
2.7.13.

: , , .
 , 70% 80 .
 ,
 - ,
 „inflow“ „outflow“ 67 .
 : 1) ; 2) ; 3)
 ; 4) 5)



.42

6



.43

2.8

() ,

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82

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69

83

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2010.

2012. 90

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90

(Organ Injury Scaling Comitee of the American
Assotiation for the surgery of Trauma) 1989.
(Liver Injury Scale) 1994.

„ edCalc Version 9.2.0.1“.

(SD) : (SE). (),

: - , ²- - .
.

5.

90

2010. 2012.

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(

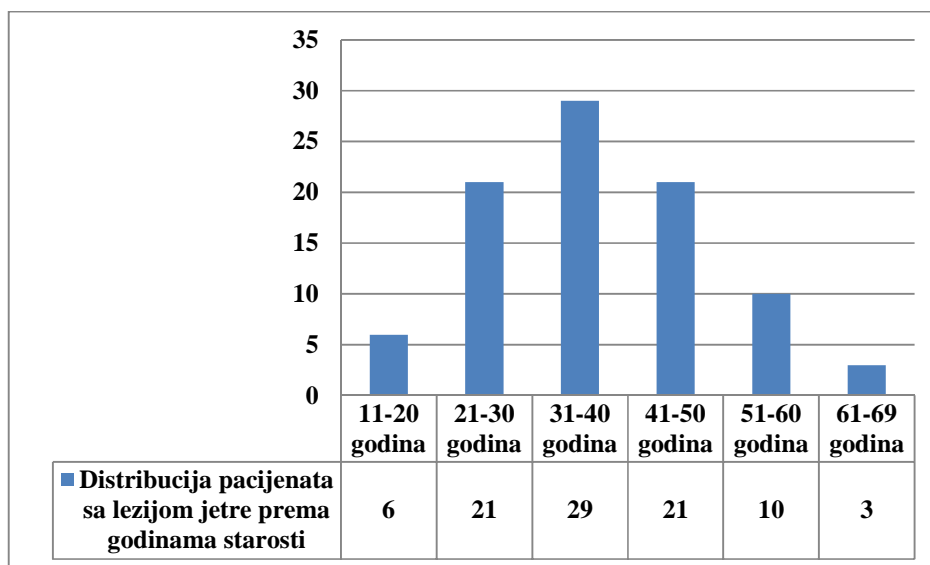
).

.3

		%		%		%
	57	80,28	15	78,94	72	79,61
	14	19,72	4	21,06	18	20,39
	71	100	19	100	90	100

72, 79,61%, 18 (20,39%).

. 1



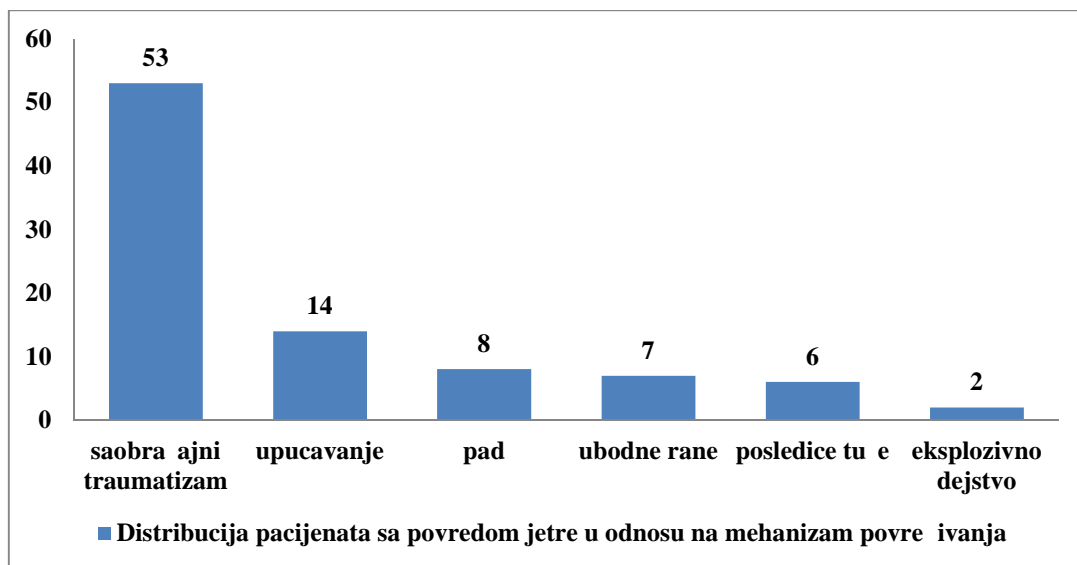
11-20 godina: 6 (6,7%),
 21-30 godina: 21 (23,3%),
 31-40 godina: 29 (32,2%),
 41-50 godina: 21 (23,3%),
 51-60 godina: 10 (11,1%),
 61-69 godina: 3 (3,3%)

. 4

		N	x	sd	T test	P
		72	38,555	12,618	2,350	0,021
		18	31,388	8,651		

, ,
, - ,
(< 0,05).
38,555, 31,388.
12,618, 8,651.

.2



53 (58,9 %)

, 14 (15,5%)

, 8 (8,9 %),

7 (7,8%)

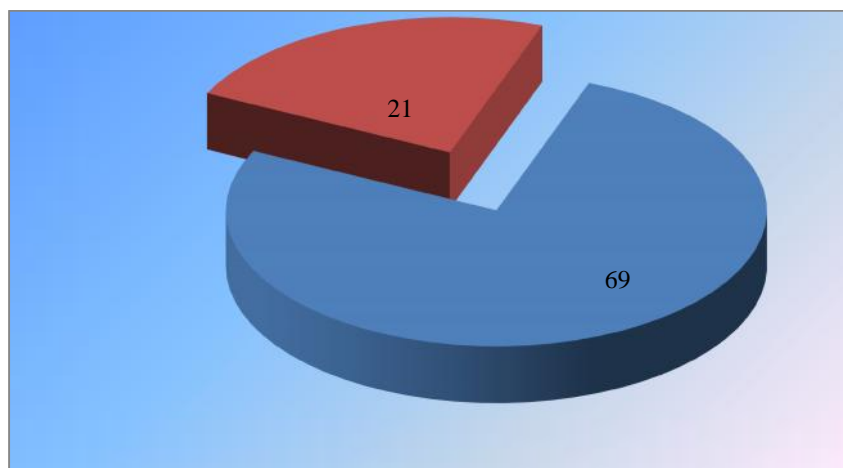
, 6 (6,7 %)

, 2 (2,2 %)

.5

				X	СД
	53	14	69	41,0755	11,0868
	14	20	54	34,2857	8,6329
	8	11	61	35,1250	19,3939
	7	21	36	26,7143	4,9570
	6	19	42	27,8333	9,3897
	2	17	28	22,5000	7,7782
	90	11	69	37,0778	12,2330

.3



, 69 (76,67%)
 , 21 (23,33%)
 (,).

.6

					T	
O		69	39,2174	12,6664		
T A E		21	30,0000	7,2180	4,212	<0,001
E						

, ,
 , - ,
 (< 0,001).
 39,2174
 30,000.
 12,6664 7,2180.

.7

	43 (20,69%)	7 (3,44%)	50 (24,14%)
	5 (8,04%)	12 (67,81%)	17 (75,86%)
	48 (36,73%)	19 (71,25%)	67 (100%)

	89,58%	77,33% - 96,49%
	63,16%	38,38% - 83,65%
	71,64%	59,31% - 81,98%
.	86,00%	73,25% - 94,16%
.	70,59%	44,05% - 89,58%

	17,308
	1
	< 0,0001
	0,453

89,58%, 63,16%, 71,64%,
 70,59%, 86,00%.

17,308; 0,453;
 <0,0001.

. 8

	47 (32,91%)	1	48 (32,92%)
	2 (2,53%)	7 (64,55%)	9 (67,08%)
	49 (35,44%)	8 (64,55%)	57 (100%)

	95,92%	85,99% - 99,38%
	87,50%	47,38% - 97,93%
	85,96%	74,20% - 93,72%
. .	97,92%	88,89% - 99,65%
. .	77,78%	40,06% - 96,53%

	29,991
	1
	< 0,0001
	0,587

87,50%. 85,96%,
97,92%. 95,92%,
77,78%.

29,991; 0,587;
<0,0001.

.9

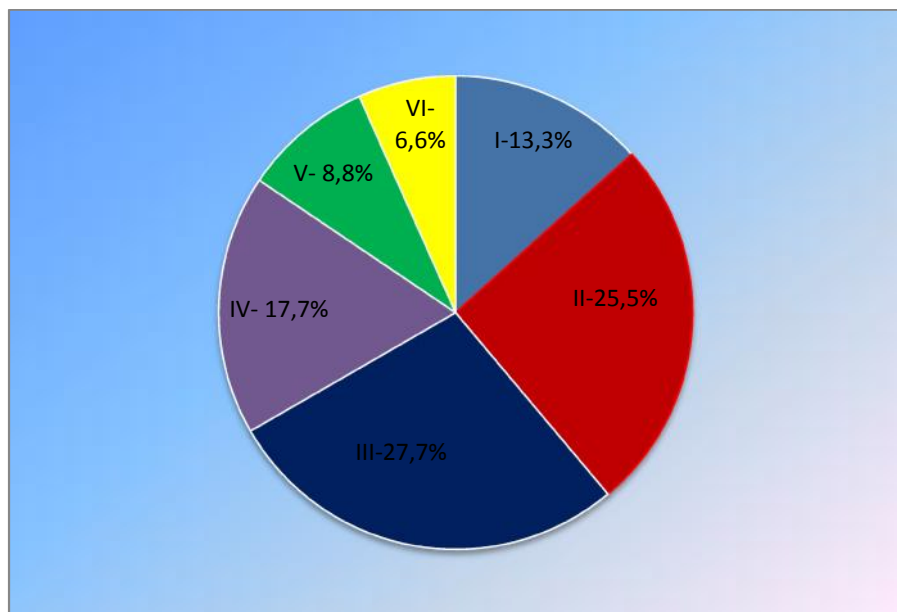
	29 (8,82%)	7 (82,36%)	36 (91,18%)
	4 (2,94%)	1 (5,88%)	5 (8,82%)
	33 (11,76%)	8 (8,82%)	41 (100%)

	87,88%	71,78% - 96,52%
	12,50%	2,07% - 52,62%
	80,49%	65,13% - 91,15%
. .	80,56%	63,97% - 91,77%
. .	20,00%	3,30% - 71,19%

	0,328
	1
	= 0,5668
	0,089

87,88%, 12,50%, 80,49%,
 20,00%, 80,56%,
 0,328; 0,089;
 =0,5668.

4



1994.

(13,3%), 23 (25,5%) 12
 10 25 (27,7%) 3
 86

16 (17,7%).
 , -
 , 8 (8,8%),
 , ,
 6 (6,6%).

. 10

		(%)
II	7	7,7
III	8	8,8
IV	5	5,5
V	11	12,2
VI	24	26,6
VII	23	25,5
VIII	12	13,3

, 24 26,6%, 25,5%
 23 .
 , 12 (13,3%), - 11
 (12,2%). , 8
 (8,8%).
 , 7 (7,7%) - 5

(5,5%%).

(<0,05).

. 11

	II	III	IV	V	VI	VII	VIII	
	4	5	3	4	19	12	6	53
	3	2	1	0	2	4	2	14
	0	0	1	0	1	4	2	8
	0	1	0	6	0	0	0	7
	0	0	0	1	2	3	0	6
	0	0	0	0	0	0	2	2
	7	8	5	11	24	23	12	90

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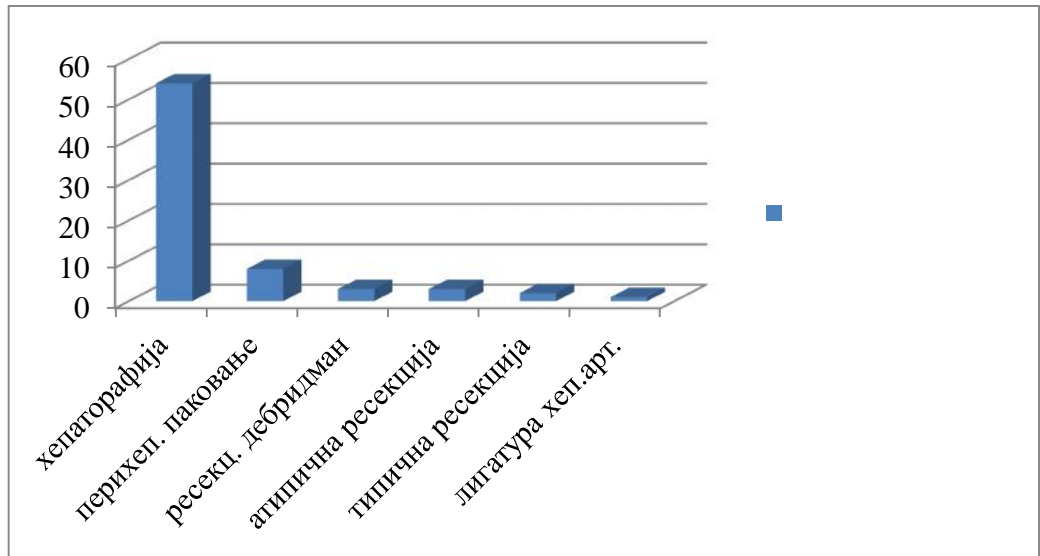


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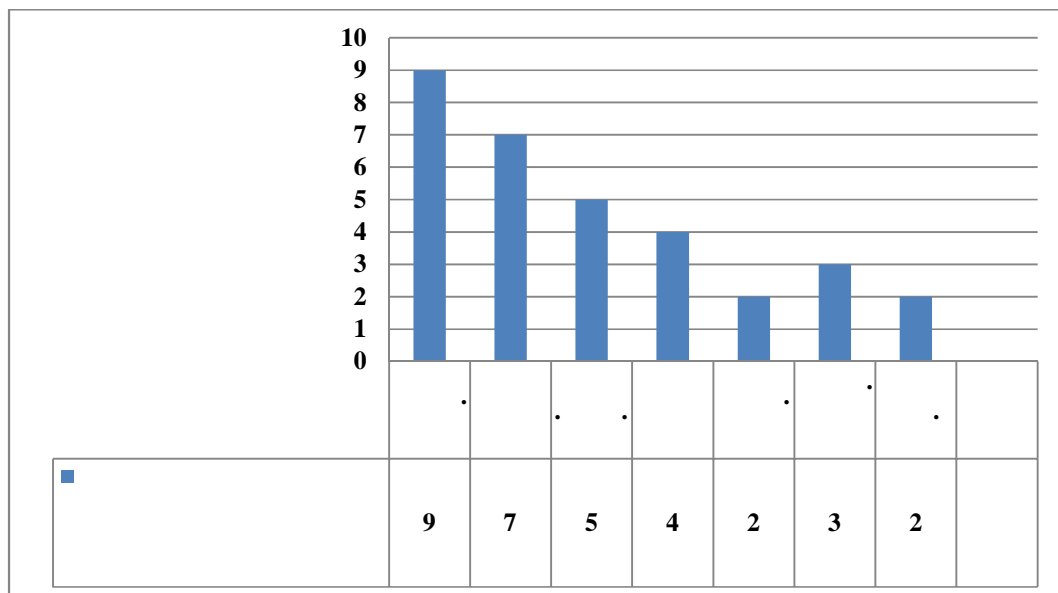
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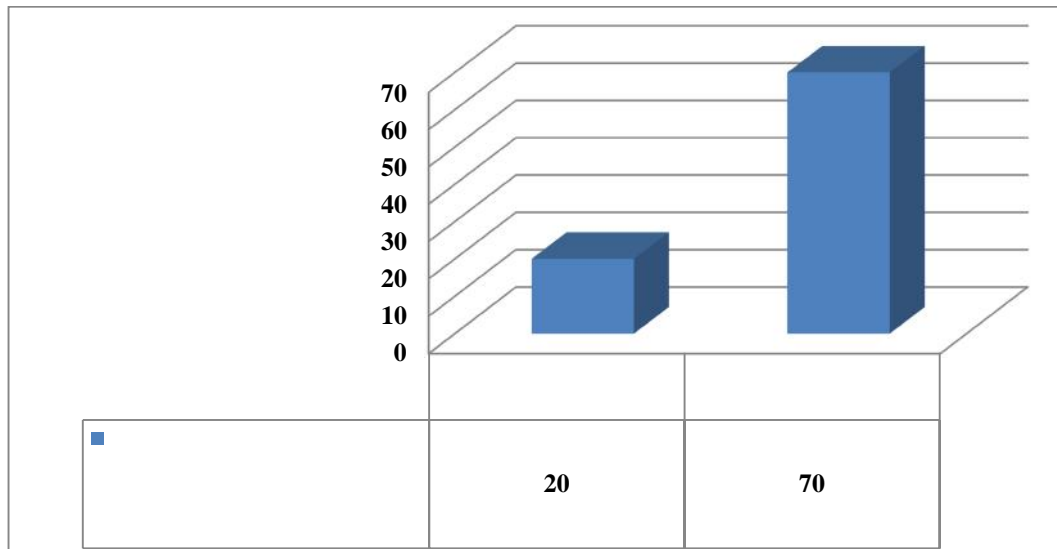
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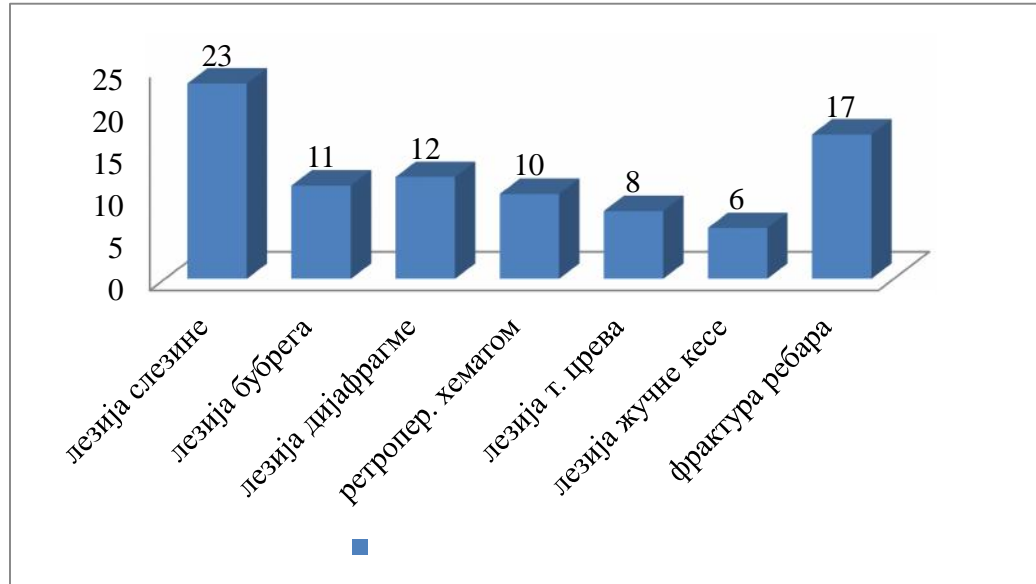
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20 (22,2%)

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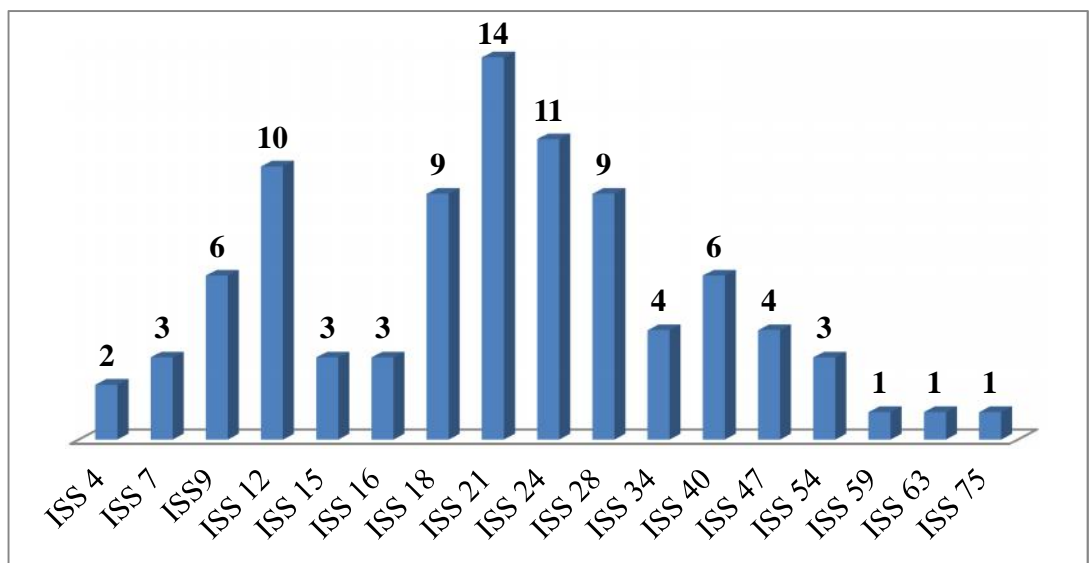
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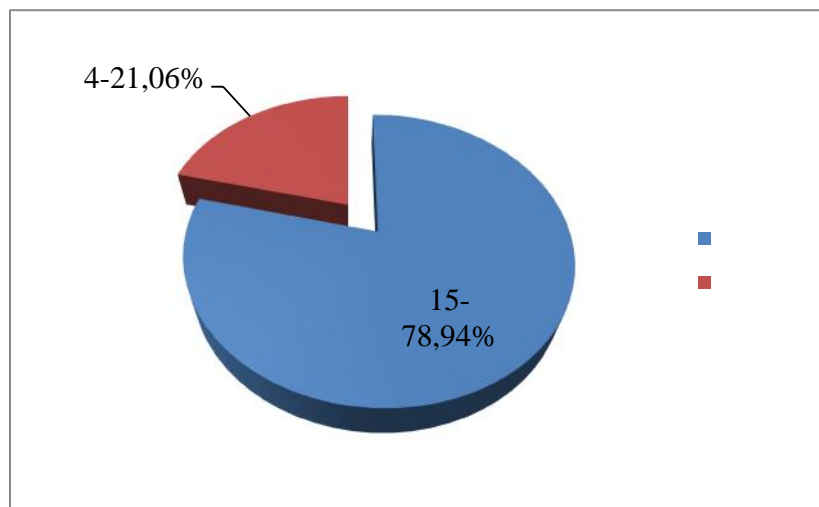
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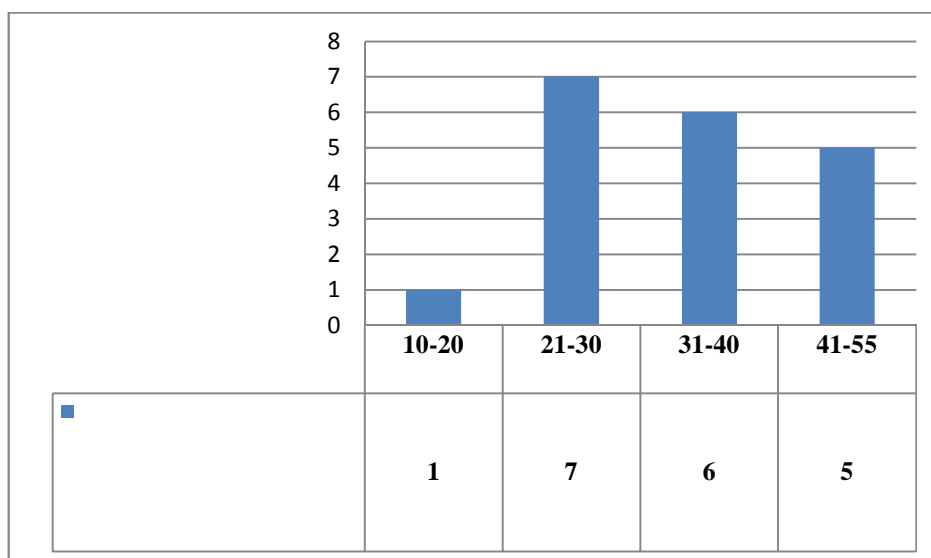
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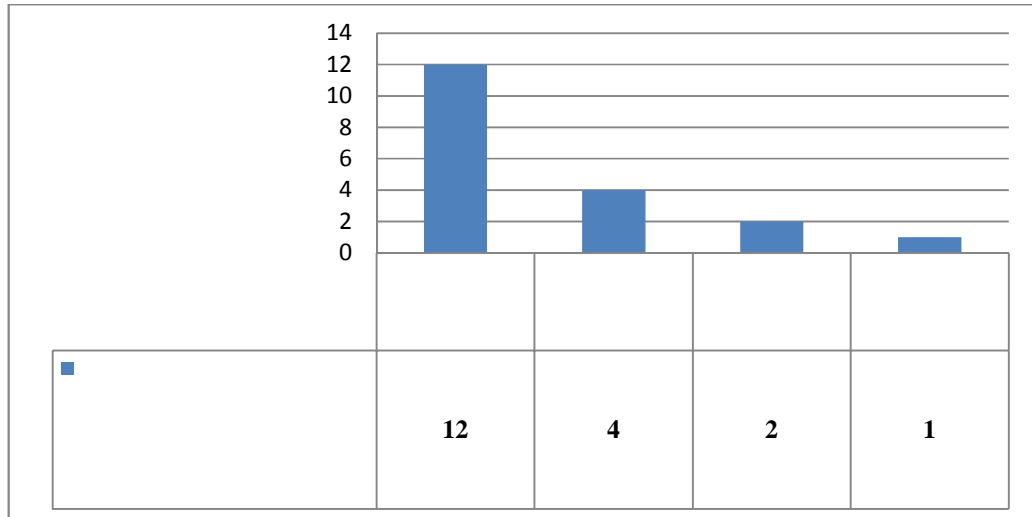
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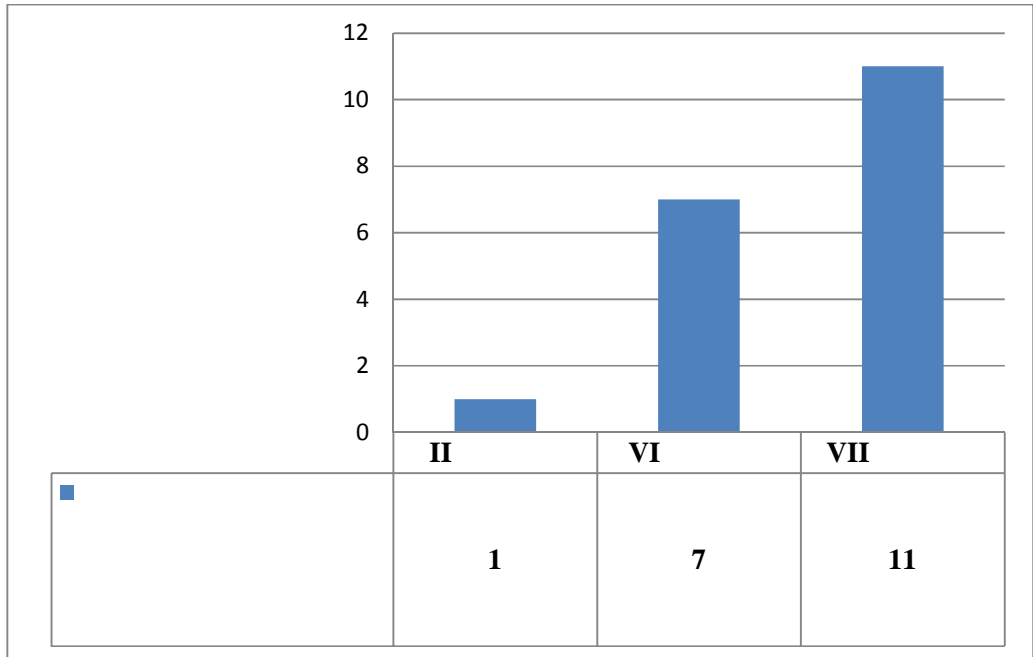


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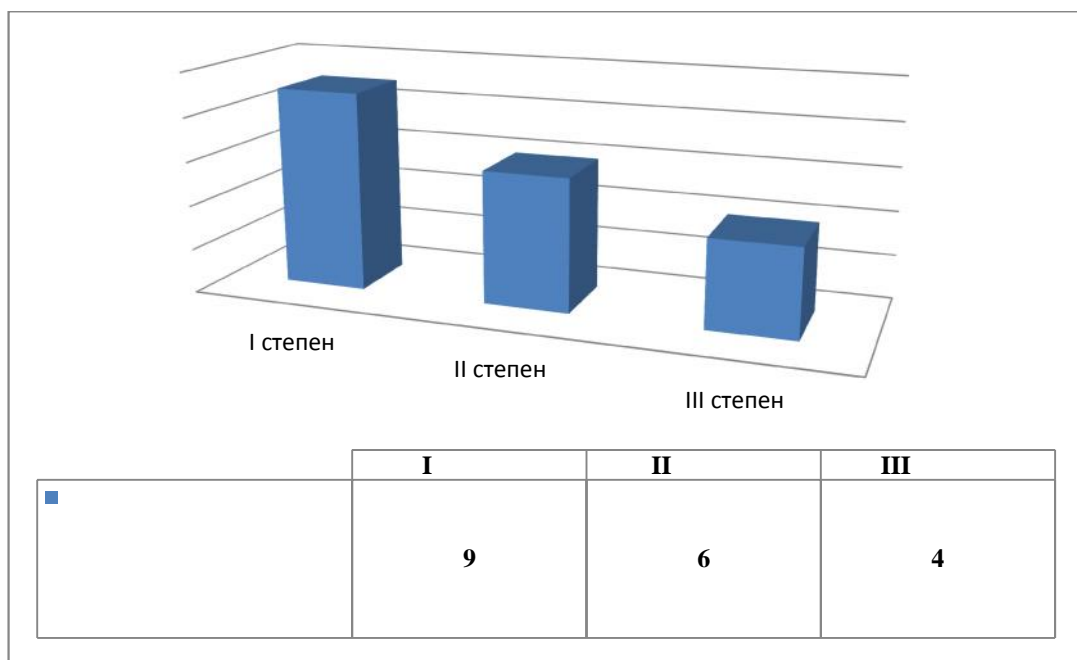
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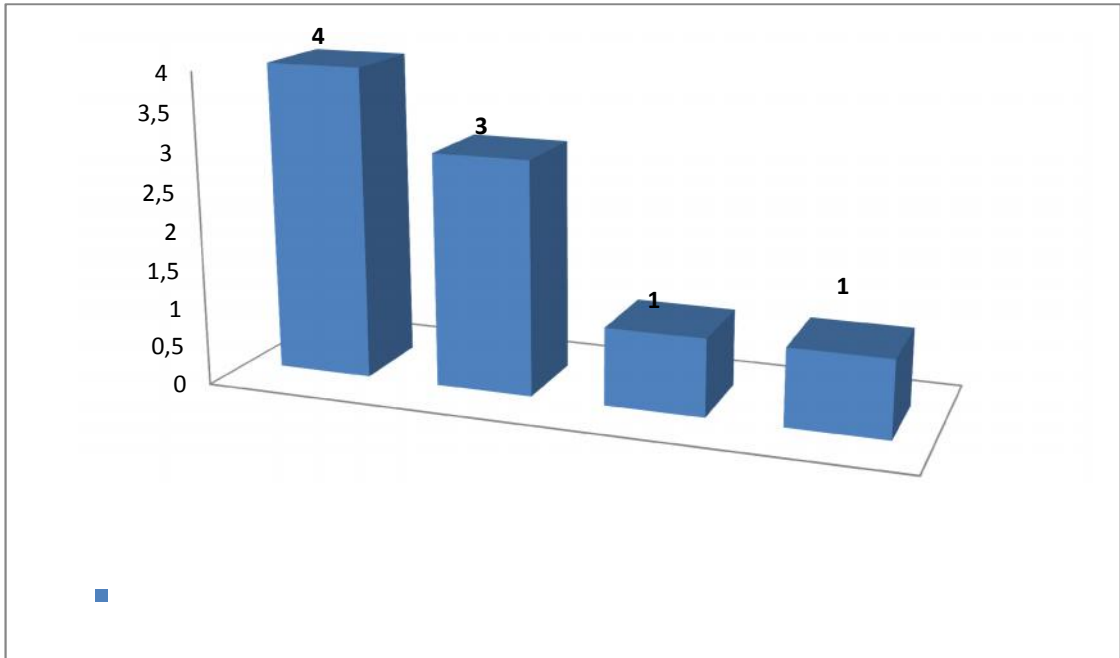
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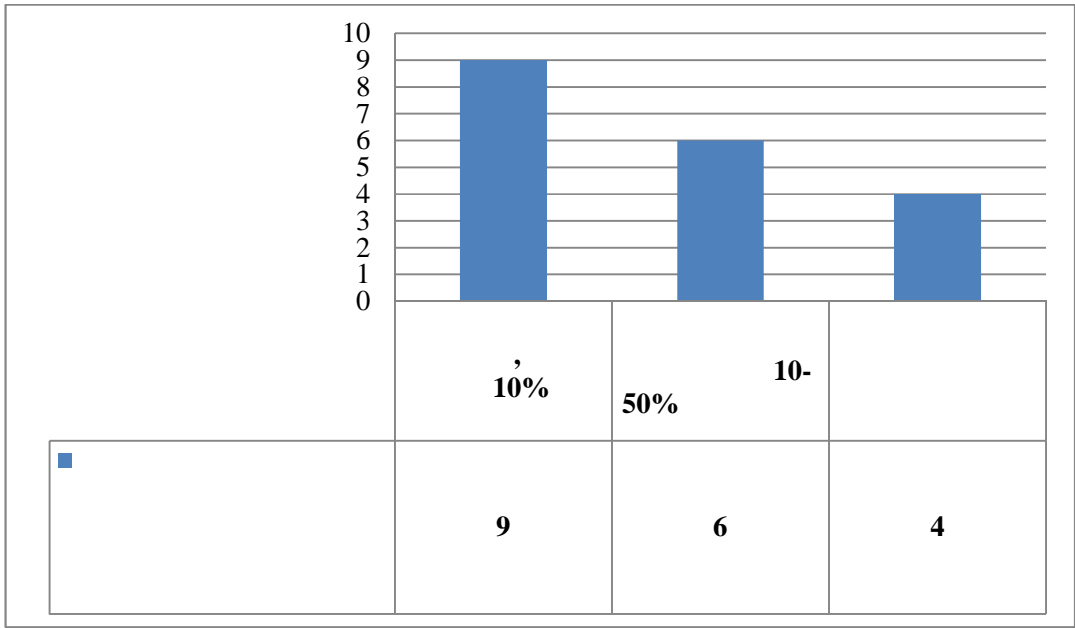


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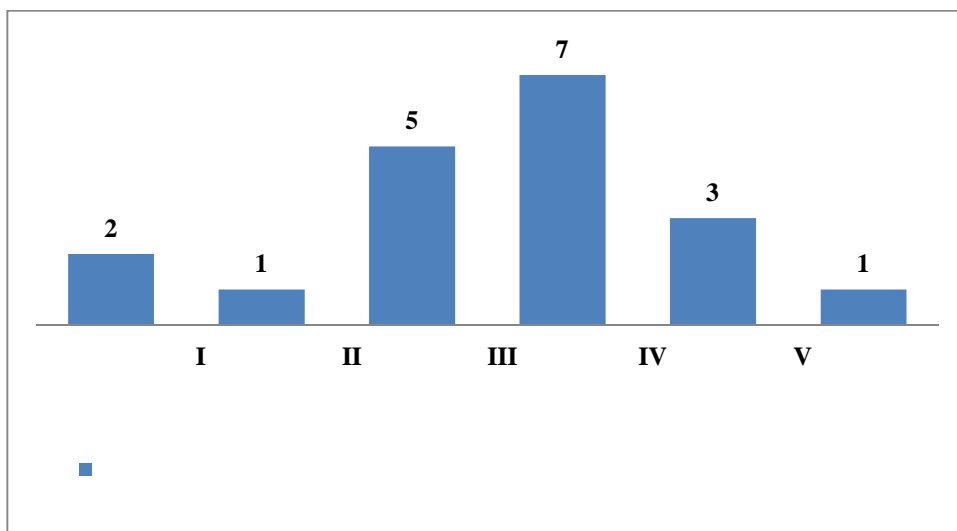
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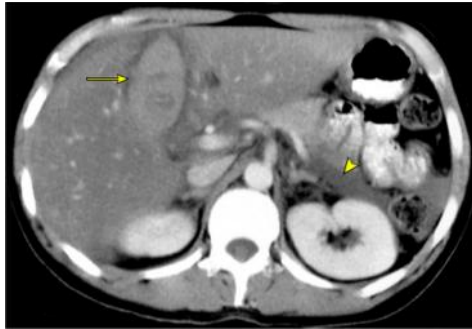


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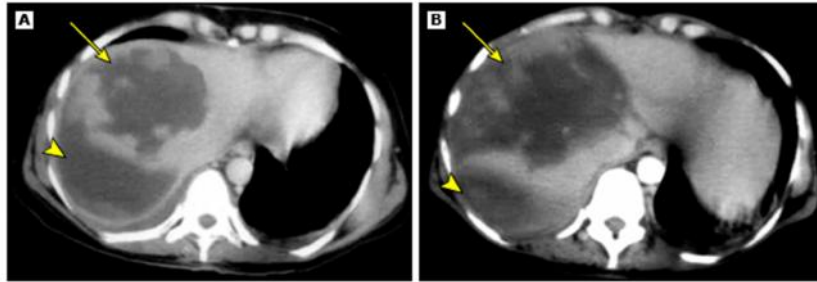
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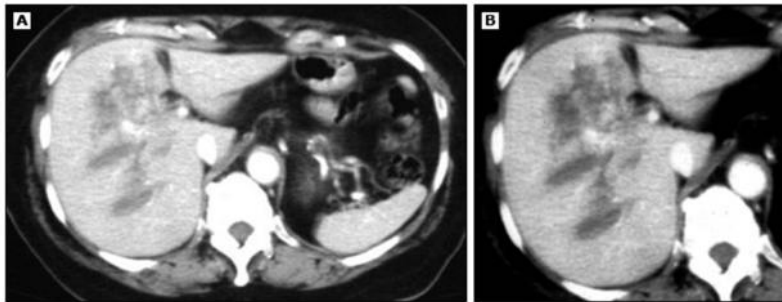


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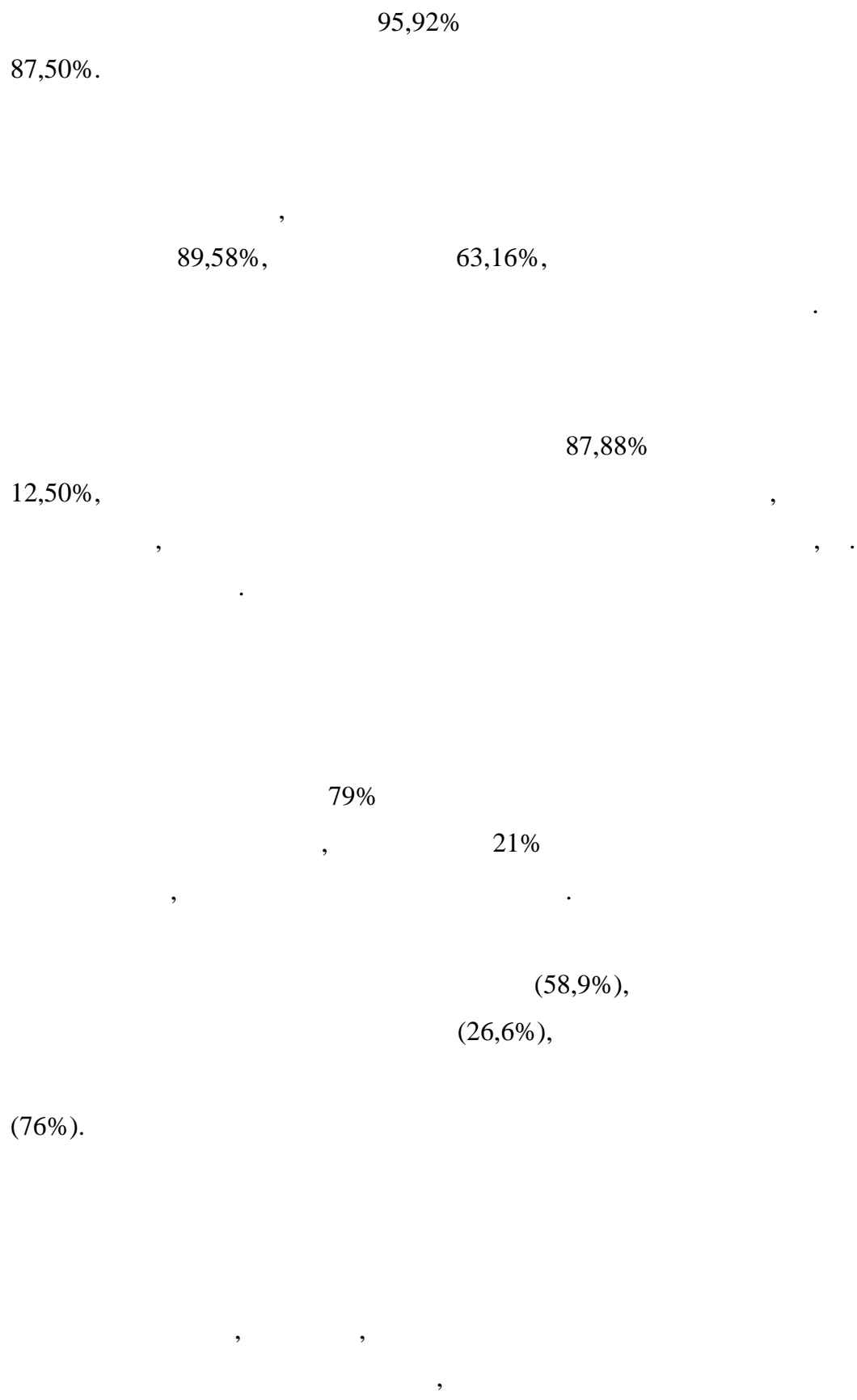
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