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EARLY RHEUMATOID ARTHRITIS JOINT DESTRUCTION: APPROACHES TO THE PREDICTION OF DISEASE
D.G. Rekalov

SUMMARY

Laboratory parameters that describing inflammatory process and joint destruction were examined in 365 patients with early rheumatoid arthritis. The interrelation of variations of laboratory parameters and joint destruction by radiologic diagnostics was revealed. There was found, that in primary examination C-terminal telopeptides-I and II are predictors of structural variations of joints, whereas matrix metalloproteinase-3 and protein YKL-40 levels were associated with an articulate inflammation.

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-I   II   ,
-3   YKL-40   .

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[8].   II,   ,   -
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- (MM -3)   YKL-40   -
,   -   ,   [39],   -
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,   - [4, 5, 8,10].   (   ) -
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[1-7],   -   [11-13].   ,   -
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[14-16].   365

-                          [22],
                                    -            ,   12 -
              [17, 18].   -   .   48,2
      ,   (39   63   ), 77,4%   -
      ,   -
            [21].   -   312   .   -
              ,   -
      ,   (DAS28),   -
              ,   ,   -
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      ,   -   ,   1.
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,	48,24±2,6
	, n (%)	113 (30,9)
	, n (%)	252 (69,1)
, .	10,4±1,1
+ , n (%)	199 (55)
PA+, n (%)	266 (73)
, n (%)	53 (14)
, n (%)	260 (71)
HAQ,	1,3 (0,7-2,1)
DAS28	5,8 (4,4-6,5)

                  : -   ;   -   ;
      –   ;   –   ; AQ-   Health
Assessement Questionnaire; DAS28 –   (Disease Activity Score).

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                  10   .   -
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      (,   ),   15-20   /   (Smolen JS, Landewe
                          DAS28   R, Breedveld FC, et al., 2010),   -
          «   »   ,   -
          Q.   5   /   .
              70%   -
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(   ),   14% -   (   )   -   GE Signa» (1,5   ).
          5,1±1,8   /   (   ).   ,   -
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(Medical Devices).
RAMRIS [24],
(0 150),
(0–45) (0–9).

Sharp van der Heijde (SHS; 0 280).

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-70°C.
(IgM),
(-),
C- (C-)
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(ELISA) -
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-3, sYKL-4; ; -I;
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RAMRIS, DAS28),

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0,15.

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«STATISTICA® for Windows 6.0» (StatSoft
Inc., AXXR712D833214FAN5), «SPSS 16.0»,
«Microsoft Excel 2003».

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<0,05.

(.2),
(.3)
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2

, /	3,9 (3,0-5,0)
, /	10,8 (8,9-13,1)
- , /	0,37 (0,25-0,52)
- , /	198 (130-314)
YKL-40, /	57 (41-97)
-3, /	47 (22-83)
- , /	5 (2-10)

, YKL-40, MM -3 M
(RAMRIS.
3). 55% R²,
- , 40% - ,
. (92%)
. - .

, (, ,
.).
, , YKL-40, MM -3 ,

- ,   -   (,   ,   -
RAMRIS-   .   ) (.2,   -
R2.   -   RAMRIS-   ).   -
-                                      C-   ,   -
-   (.2).   -   (p=0,01)   YKL-40 (p=0,05),
-3 (p=0,08).

3

RAMRIS (0-9)	5 (3-6)
RAMRIS (0-150)	8 (5-11)
RAMRIS (0-45)	2 (1-6)
SHS (0-280)	2 (0-5)
DAS28 (1-10)	4,2 (3,0-5,1)

YKL-40   MM -3   ,   -
C-   -   (
RAMRIS (   ) (.2).   ).

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					p
	- (95%)		- -	-	
RAMRIS					
ln	1,54 (−1,55; 4,62)	0,11	0,01	0,32	–
ln	0,20 (0,07; 0,33)	0,33	0,11	0,002	0,007
ln -I	0,79 (−0,35; 1,92)	0,18	0,03	0,17	–
ln -II	0,59 (−0,17; 1,35)	0,19	0,04	0,16	–
ln YKL-40	1,34 (0,64; 2,04)	0,40	0,16	<0,001	0,014
ln MM -3	0,94 (0,43; 1,46)	0,38	0,15	<0,001	0,009
C-	0,03 (0,01; 0,06)	0,27	0,07	<0,001	0,015
RAMRIS					
ln	1,26 (−0,17; 2,68)	0,20	0,04	0,082	0,16
ln	−0,0006 (−0,061; 0,061)	0,00	0,00	0,998	–
ln -I	−0,10 (−0,62; 0,42)	−0,05	0,01	0,702	–
ln -II	0,29 (−0,10; 0,67)	0,19	0,04	0,14	0,29
ln YKL-40	0,40 (0,07; 0,73)	0,27	0,07	0,019	0,06
ln MM -3	0,37 (0,13; 0,61)	0,34	0,12	0,003	0,002
C-	0,02 (0,01; 0,03)	0,39	0,15	0,001	0,002
DAS28					
ln	1,38 (−0,65; 3,41)	0,15	0,02	0,18	–
ln	0,17 (−0,36; 0,70)	0,08	0,01	0,52	–
ln -I	−0,27 (−1,02; 0,49)	−0,09	0,01	0,48	–
ln -II	0,06 (−0,03; 0,15)	0,14	0,02	0,20	–
ln YKL-40	0,76 (0,28; 1,23)	0,34	0,11	0,002	0,001
ln MM -3	0,33 (−0,03; 0,70)	0,20	0,04	0,08	0,024
C-	0,02 (0,01; 0,04)	0,301	0,09	0,007	0,006

Маркер	RAMRIS синовиит			RAMRIS отек костного мозга			DAS28		
	Одномерный дисперсионный анализ		Скорректированный уровень значимости*	Одномерный дисперсионный анализ		Скорректированный уровень значимости	Одномерный дисперсионный анализ		Скорректированный уровень значимости
	95% ДИ	p	p	95% ДИ	p	p	95% ДИ	p	p
lnYKL-40	0,71 (0,38; 1,04)	<0,001	0,022	0,22 (0,08; 0,37)	0,003	0,18	0,97 (0,66; 1,21)	<0,001	<0,001
lnMMП-3	0,37 (0,15; 0,59)	0,001	0,004	0,16 (0,07; 0,26)	0,001	0,002	0,35 (0,14; 0,58)	0,001	0,004
С-РБ	0,02 (0,01; 0,03)	<0,001	–	0,01 (0,01; 0,01)	<0,0	–	0,03 (0,02; 0,04)	<0,001	–

Примечание: * - коррекция по полу, возрасту, терапии (РА-модиф. Лечение, пероральные глюкокортикоиды), и по СРБ

YKL-40   ММР-3   -   р   -
                            ,   -   ,   (.4,
                                                       -   ).
                            DAS28.   -   -
    .4,   ММР-3 YKL-40   YKL-40   -
                    DAS28.   .   ОМ
    - ,   YKL-40   -   RAMRIS (   )   .
      (p=0,02).   DAS28   -
      YKL-40,   C-   -
                    R2.   ,   -   -
                                                             -                          .   -
                                                             -   -
                    .   ,   YKL-40   ММР-3   -
                                                             -                                    - .
                    ,   -
                    YKL-40   ММР-3   -   – 1 (0-2,5)
                                                1   .6,   -I   -
                                                             -   ,   -
                                                             -   -
                    .   .5, ММР-3   RAMRIS (   )   12   -
YKL-40   C-   .   -I   -
                    ,   DAS28.   ,   .
                                                                                                            6

	(95%)	-		-	
ln	−0,72 (−1,68; 0,25)	−0,18	0,02	0,15	−
ln	0,13 (−0,34; 0,59)	0,07	0,00	0,59	−
ln -I	0,32 (−0,01; 0,65)	0,26	0,07	0,05	0,05
ln -II	0,23 (−0,01; 0,47)	0,24	0,04	0,06	0,25
ln YKL-40	0,07 (−0,17; 0,32)	0,07	0,00	0,55	−
ln ММР-3	0,12 (−0,05; 0,29)	0,17	0,03	0,16	−
-	0,02 (0,01; 0,03)	0,37	0,14	0,002	0,028

            ,   DAS28   -
            ,   -
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                                                     -
            ,   C-   -I   -   ,   (
                ,   -   ) (.5).
        .   DAS28, RAMRIS (   ),   -
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-I (0,30 MR , YKL-40 MM -3
/) -II (180 /) .
[32,33,34,35].

82% 56% -II MM -3 YKL-40
63% 68% -I . «
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-II -
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MM -3 YKL-40 - –
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. -I -II , RANKL.
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[1,2,3,5,28,29]. - ,
-I - .M -
, - ,
- [24].
I - ,
SHS. -
-II ,
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RAMRIS - [36]. , , -
. -I -II - ,
« » - DAS28. ,
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-II -I - ,
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, MM -3 YKL-40 - .
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[4,5,8,10], , , -
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[30,31].

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[39, 40]. -

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1. -I -

II

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MM -3 sYKL-40 -

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-I -II

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II -

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