

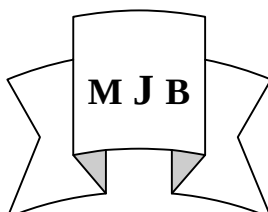
Senescence and Immunity in some Arthropathy patients

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**Abstracts**

Three basic arthritis types were noted among elderly and adults. The first inflammatory lymphocytic, the second autoimmune, while, the third is septic neutrophilic type. The inflammatory and autoimmune were associated with mucosal lymphocytosis. The septic was neutrophilic both at mucosal and systemic arms. The autoimmune was rheumatoid factor positive and the septic were associated with injured *S.aureus* and *St.pyogenes*. senescence exhibits some what suppressive effects on specific antibody titres as 200/40 (systemic/ mucosal) while in adulthood was 320/32 and leucocyte inhibitory factors as 0.8/0.28 (systemic/ mucosal) and in adulthood as 0.6 / 0.45 thus elderly arthropathic patients showed suppressed antibody and LIF responses as compared to adulthood

الشيخوخة ومناعة بعض مرضى المفاصل

الخلاصة

لوحظت ثلاث أنماط من التهاب المفاصل بين الشيوخ والبالغين. النمط الأول التهابي لمفي، النمط الثاني هو ناتج من مرض ذاتي المناعة، النمط الثالث كان تقحيبي ذو ارتشاح العدلات. وقد اشترك كل من اللمفي وذاتي المناعة مع زيادة خلايا لمفية على السطح المخاطي المفصلي في حين كان بزيادة عدلات في التقحيبي وعلى مستوى الاستجابة البدينة والمخاطية. وكان النمط ذاتي المناعة موجب مع عامل الرثوانية وتبين بان النمط التقحيبي مشترك مع مكورات عنقودية ذهبية ومكورات سبكية مقبحة متضررتين. وقد أبدت الشيخوخة بعض الفعل المثبط على الاستجابة المناعية البدينة والمخاطية الخلطية (200 /0.40) (مستوى الاضداد) والخلوية (تنشيط هجرة الخلايا) (0.8/0.28)

Introduction

Human life span consist of childhood , adolescence, adulthood and senescence (1).

The humoral and cellular elements for natural and adapted immune responses undergoes several changes on aging in comparison to that of youth and adolescent . Some elements are decreasing, others, however, are increasing. Such spectra of increasing and decreasing can be a result of genetic and environmental factors (1, 2). The objective of the present work was at the study the influences of immunosenescence on human arthropathy

Synovial and blood samples were collected Mucosal immunoglobulin was separated as in (3). Sera were obtained for total serum protein , serum globulin and specific antibody as well as RF test were made (4, 5). LIF was done for peripheral blood and mucosal leucocytes (6). Bacterial culture study was done as in (7, 8).

Migration of leucocytes with sensitizer

LIF%=

$$X \ 100$$

Migration of leucocytes without sensitizer

Inhibition of more than " 30 % is significant.(6)

Materials and Methods

Nine adolescent and Nine aged arthropathy patients and nine other control subjects.

Results

I- Synovial fluid; three major types of synovial fluid were noted as Inflammatory autoimmune and septic (Table -1)

II- Aetiology; Bacteria , autoantibody, anti IgG (RF) and all defined (Table-I).

III- Inflammatory cells; Neutrophils as in S. pyogenes & St aureus acute arthritis . Lymphocytic responses were evident in those of nonbacterial causes. Mucosal lymphocytosis was 68.4 and higher than these of bacterial arthritis 18.5. Table 1 & 2

IV- Mucosal Globulin (MG) & Serum Globulin SG concentrations of aged arthropathy patients was higher than in normal subjects. In patients serum globulin was higher than controls. aged patients were higher than adolescent and youthhood.

V- Specific antibody ; (table 2, 4) pyogenic acute arthritis rise specific antibodies titer to 320 in blood and 32 at mucosa in adolescent ageing suppresses such titres

VI- Autoantibody ; Two senses and two youthhood RF positive cases.

VII- Leucocyte Inhibitory factors (LIF) (Table 3 & 4), LIF at mucosal surface and peripheral blood were significant in adolescent and nonsignificant in aged patients . (Table 3, 4).

Discussion

The human life span in health and disease consist of childhood adolescent adulthood and senescence phases (1,9). Thus in any instance of his life one may expect to find out healthy and diseased adulthood as well as health and diseased senescences subject (10). The major histocompatibility complex (MHC) and its polymorphic genes expression

products, the human leucocyte antigens (HLA) or major histocompatibility molecules controls, the immune responses, antigen processing antigen presentation and immune recognition (11).

The childhood and senescence are mostly associated with reduction of immune reactivity and can be attributed to immune connecting lymph vessels, low number of lymphocyte in lymph nodes or lack of lymphocyte and macrophages surface receptors (12). While in case of senescent changes may be attributed to altered elements of natural immunity or altered elements of adapted immunity (13). Since aging is a multifaceted process that affects different individuals in different ways and affects discrete organ systems in distinct ways within same individual. Furthermore, within complex organ systems, different segments or portions of the system may be affected in different rate and to different degrees by aging (1).

Aging may affect reduction in antigen uptake antigen processing , antigen presentation , and immune recognition (14). Lower antibody level seen in senescence patients can be attributed to impairment in antigen recognition by Th2 or B cell or low antibody synthesis by plasma cell, replenishing effect or increased antibody catabolism (15).

Non significant LIF in aged patient (table-1) indicate either of the followings (5,6,11,13)

- i. Abscences of appropriate sensitizers (inducers)
- ii. Low synthesis
- iii. Diminished cytokine production
- iv. The produced cytokine involved and exhausted to other reactions (16).

The noted RF positive case means involvement of an autoimmune response that can be induced by an autogenic epitope

or by bacterial derived epitope having portion of mimicking property to an autoantgen (17). Aging however, may facilitate breaking self tolerance barrier leading to an autoimmune arthritis

Higher mucosal and systemic globulin concentration can be due to concamittent environmental exposure to antigen by B lymphocytes or Th2 cells which may ends by polyclonal over production of globulin by plasma cells or due to an inflamatory or infectious process(table-2) (18).

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Table (1) Arthritis Types and control, the immune parameters Arthritis .

Criteria	Inflammatory	Autoimmune	Septic	Control
Mucosal lymphocytes	68.25 %	73.33 %	18.75 %	-
Mucosal Neutrophil	29.25 %	26.66 %	81.25 %	-
Systemic lymphocyte	35.25 %	37.33 %	20.12 %	32.25 %
Systemic Neutrophil	62.25 %	56.79 %	53.5 %	62.62 %
Titre	-	-	280/38	-
LIF	-	-	0.71/ 0.64	-
RF	-	-	-	-
Agent	-	-	S. aureus or St.pyogens	-
Mucosal globulin	1.14	1.39	0.84	< 0.1
Serum globulin	49.265	44.94	42.8	36.47
Total serum protein	76.87	79.9	75.03	67.60

Table (2) Arthritis types in Elderly and adulthood.

Parameters		Senescence			Adulthood		
		Septic Arthritis	Autoimm Arthritis	Mean	Septic Arthritis	Autoimm Arthritis	Mean
Mean Age		64.75	63	63.89	19.86	56.33	38.1
System cell count	N	73.25%	58.66%	65.9%	73.75%	55.33%	64.54%
	L	32%	34.33%	28.2%	22.25%	40.33%	31.29%
	M	4 %	5 %	4.5%	3 %	3 %	3%
	E	1.5 %	0 %	0.75%	1 %	1 %	1%
	B	0 %	0 %	0 %	0 %	0.3 %	0.15%
Mucosal count	N	81.25%	26.33%	33.79%	81.25%	27 %	54.13%
	L	18.75%	73.66%	46.2 %	18.75%	73 %	45.87%
Mucosal Globulin		0.78	1.58	1.18	0.9	1.2	1.05
Serum Globulin		42.22	47	44.6	42.22	42.88	42.55
Total serum protein		72.97	79.6	76.28	77.17	80.27	79.24
Agent		S.aureus / St.pyogens	-		S.aureus/ St.pyogens	-	
RF		-	+	-/+	-	+	-/+
LIF		0.8/0.78	-		0.6/0.45	-	
Titre		200/40	-		320/32	-	

Table (3) Immune parameters in sensanals and Adulthood patient with autoimmune arthritis.

Seq	Age	Differential count/ systemic					Differential Mucosal		MG	SG	TSP	Agent	RF	Titre
Senceneat		N	L	M	E	B	N	L	MG	SG	TSP	Agent	RF	Titre
1	63	54%	37%	7 %	0%	0%	37%	63%						
2	60	51%	42%	5%	0%	0%	24%	76%	1.6	46	78.4	-	+	-
3	65	71%	24%	3 %	0%	0%	18%	82%	1.6	35	78.4	-	+	-
X	63	58.66%	34.33%	5%	0%	0%	26.33%	73.66%	1.58	47	79.6	-	+	-
Adulthood											81.31	-	+	
1	56	60%	36%	2%	1%	1%	25%	75%	0.99	48.91				
2	56	52%	42%	5%	1%	0%	35%	65%	1.82	32.3	78.2	-	+	-
3	57	54%	43%	2%	1%	0%	21%	79%	0.78	47.44	81.31	-	+	-
X	56.33	55.33%	40.33%	3%	1%	0.33%	27%	73%	1.2	42.88	80.27	-	+	-
Total Mean	54.66	56.49%	37.33%	4%	0.5%	0.11%	26.66%	73.33%	1.39	44.94	79.9	-	+	-

Table (4) Immune parameters in senscne and Adulthood with septic bacterial Arthritis.

Seq	Age	Differential count/ systemics					Differential Mucosal		MG	SG	TSP	Agent	LIF	Titre S/M
Senceneat		N	L	M	E	B	N	L	MG	SG	TSP	Agent	LIF	Titre S/M
1	63	72 %	23 %	4%	1%	0%	83%	17%						
2	65	74 %	21 %	3%	1%	0%	75%	25%	0.67	38.6	70.89	S. aureus	0.8/0.85	80/1.6
3	65	73 %	20 %	5%	2%	0%	84%	1.6%	1.0	54.0	81.89	St. pyogens	0.8/0.7	320/64
4	66	74 %	21 %	4%	1%	0%	83%	17%	0.46	40.08	60.7	St. pyogens	0.8/0.83	80/1.6
X	64.75	73.25%	22 %	4%	1.5%	0%	81.25%	18.75%	0.78	42.22	72.97		0.8/0.78	200/40
Adulthood		73 %	24 %	2%	1 %	0%	80%	20%	0.99	43.9	78.3	S. aureus	0.8/0.7	640/64
1	39													
2	40	75 %	22 %	2%	1 %	0%	78%	22%	0.57	38.61	71.00	S. aureus	0.1/0.5	160/16
3	47	75 %	20 %	4%	1 %	0%	88 %	21%	0.72	46.3	80	St. pyogens	0.53/0.44	320/32
4	38	72 %	23 %	4%	1 %	0%	80%	12%	1.3	42	78.8	St. pyogens	0.6/0.45	320/3.2
X	19.86	73.75%	22.25%	3%	1 %	0%	81.15%	18.75%	0.9	42.1	77.1		0.63/0.59	360/36