

MEMO

Korean Neurological
Association

Mar 22nd, 2015

Management of arthritis

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Chungnam National University Hospital

Chungnam National University Hospital

Immuno
suppres
ant

NSAID

Analgesi
cs

Biologic

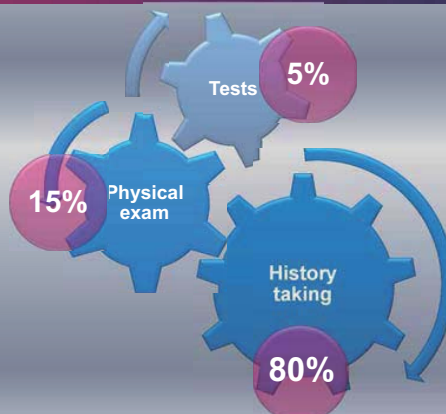
Corticos
teroid

DMARD

Small
molecule

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Information from which we diagnose



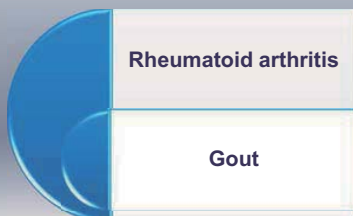
ssc@eulji.ac.kr

Classification criteria

	History	Physical exam	Laboratory Test
RA	1	5	4
SLE	1	5	6
SpA	1	1	1

M/C chronic inflammatory arthritis

120



1%

1% in >40yo male

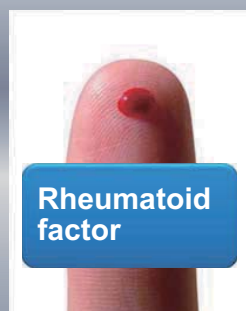
in 1900



water solubility: low
in hot water > cold,

crystallization.

in 1950

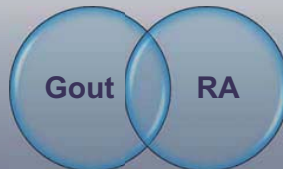


Rheumatoid
factor

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Pain on toes



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1987 ACR classification criteria for RA

- 1) 3군데 이상의 관절염
- 2) 수부관절의 관절염
- 3) 조조강직(아침에 관절이 뻣뻣함)
- 4) 좌우 대칭성 관절염
- 5) 혈청 류마티스인자 양성
- 6) 피하 결절
- 7) X선상의 특징적 변화

2010 Revised classification criteria

	Score
Target population (Who should be tested?): Patients who	
1) have at least 1 joint with definite clinical synovitis (swelling)*	
2) with the synovitis not better explained by another disease†	
Classification criteria for RA (score-based algorithm: add score of categories A-D; a score of $\geq 6/10$ is needed for classification of a patient as having definite RA)‡	
A. Joint involvement§	
1 large joint¶	0
2–10 large joints	
1–3 small joints (with or without large joints)	
4–10 small joints	
>10 joints (at least 1 small joint)††	5
B. Serology (at least 1 test result is needed for classification)‡‡	
Negative RF and negative ACPA	0
Low-positive RF or low-positive ACPA	2
High-positive RF or high-positive ACPA	3
C. Acute-phase reactants (at least 1 test result is needed for classification)§§	
Normal CRP and normal ESR ¶	0
Abnormal CRP or normal ESR ¶	1
D. Duration of symptoms¶¶	
<6 weeks	0
≥ 6 weeks	1



Deletion of Hand involvement

Mono

Poly

Gout

RA

Infection

OA

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Gout

polyarticular

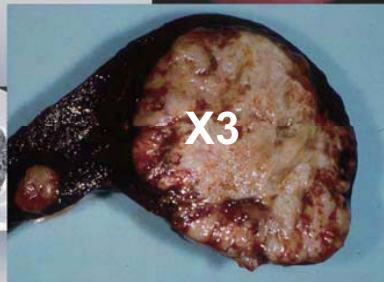
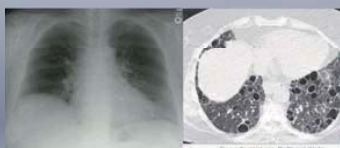
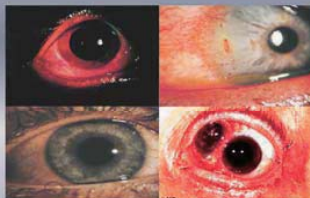
Male

39%

Female

63%

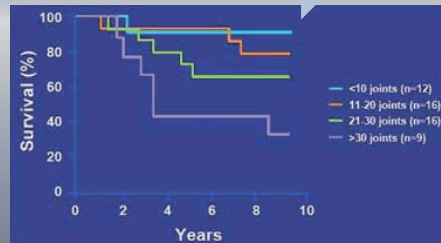
Extra-articular manifestation of RA



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It has nothing to do with death?

CV risk



What makes UA high?

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Billions cells are dying everyday

T cell

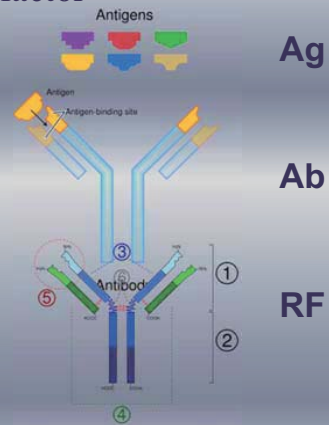
diet

Comorbidities of gout

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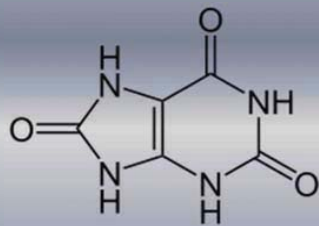


Rheumatoid factor



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Potent anti-oxidant

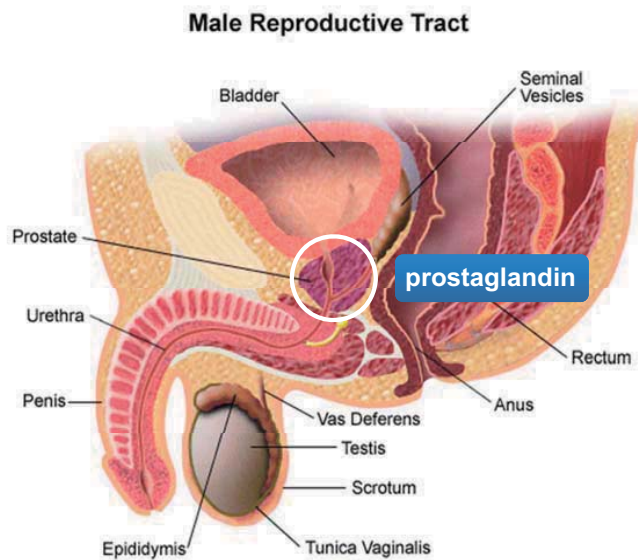


Uricase



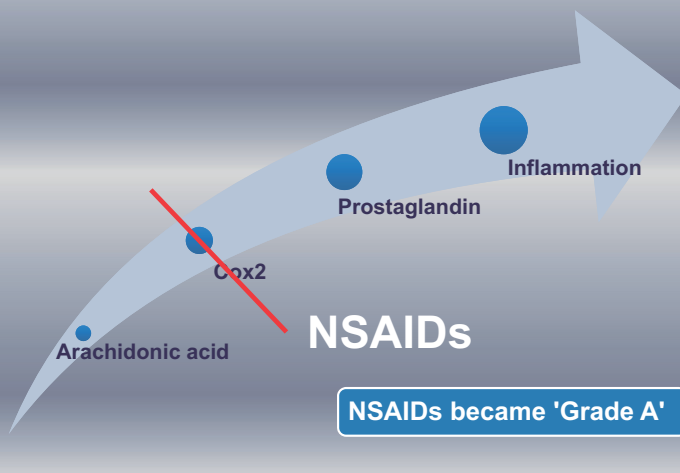
Allantoin

What should we treat?

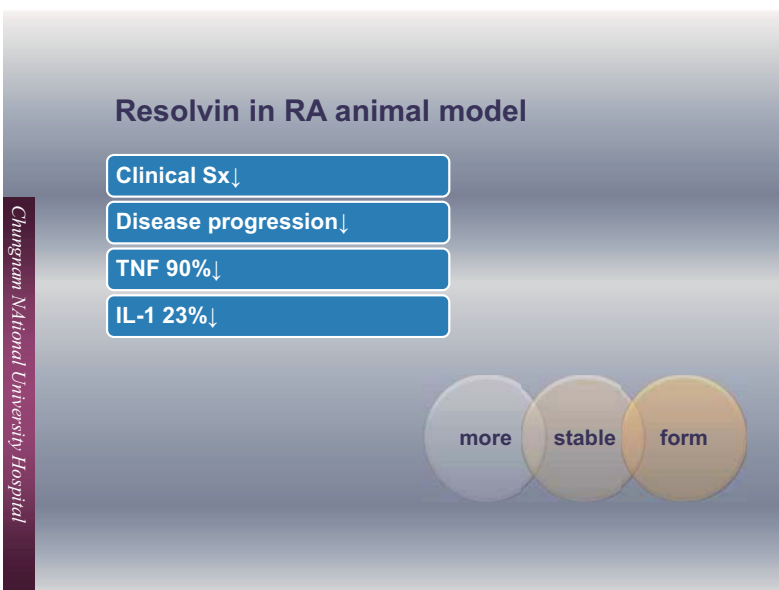
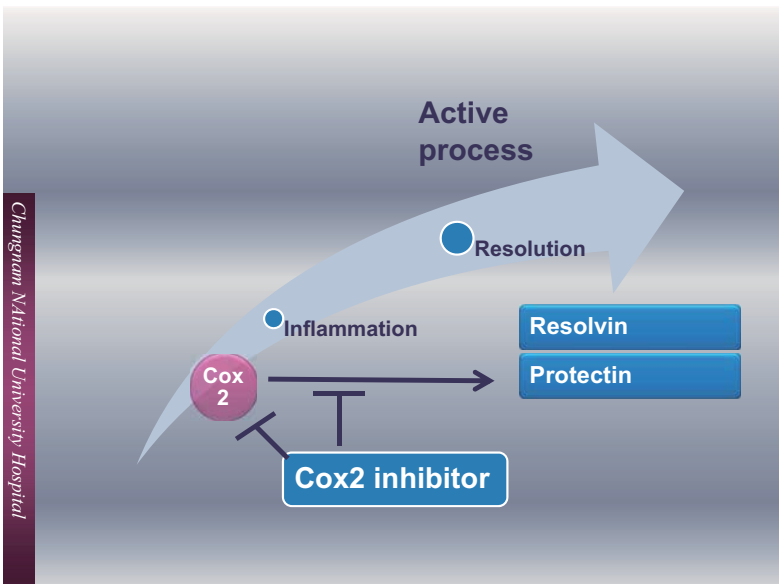
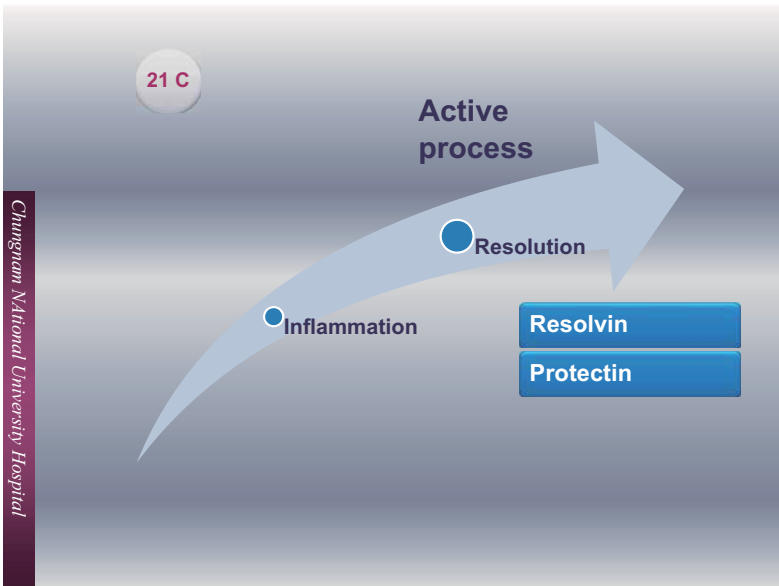


What causes an inflammation?

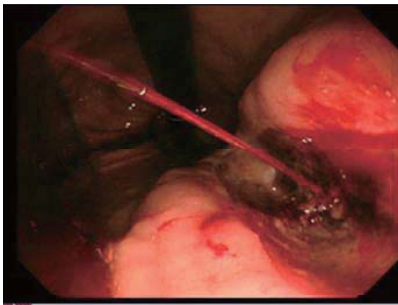
The 1st Medicine dealing with an inflammation



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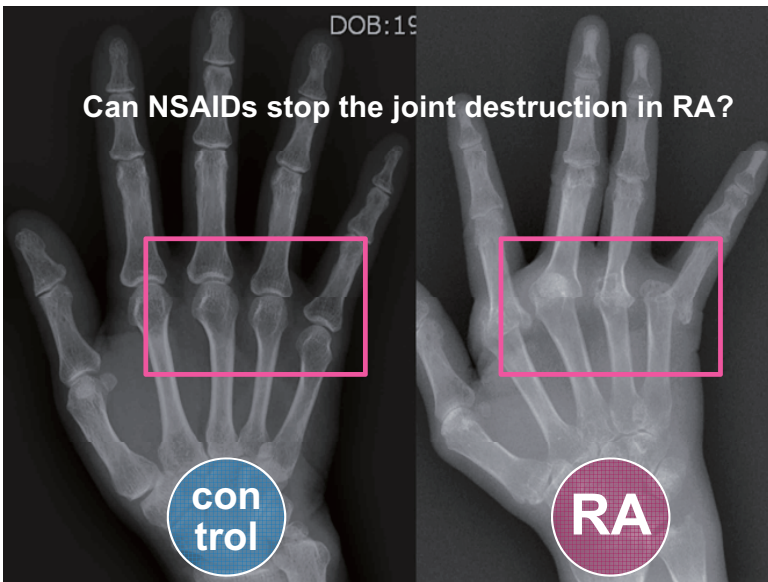
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NSAIDs fell to 'Grade B'

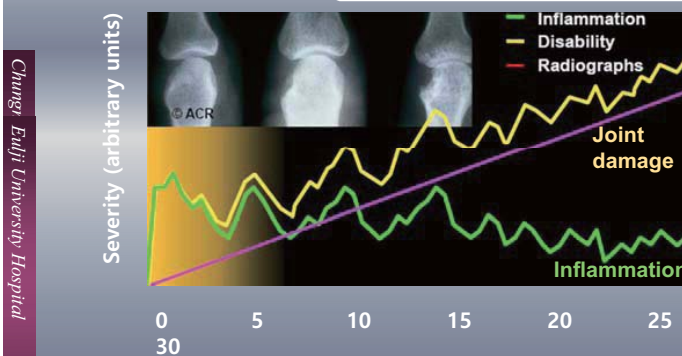


MEMO



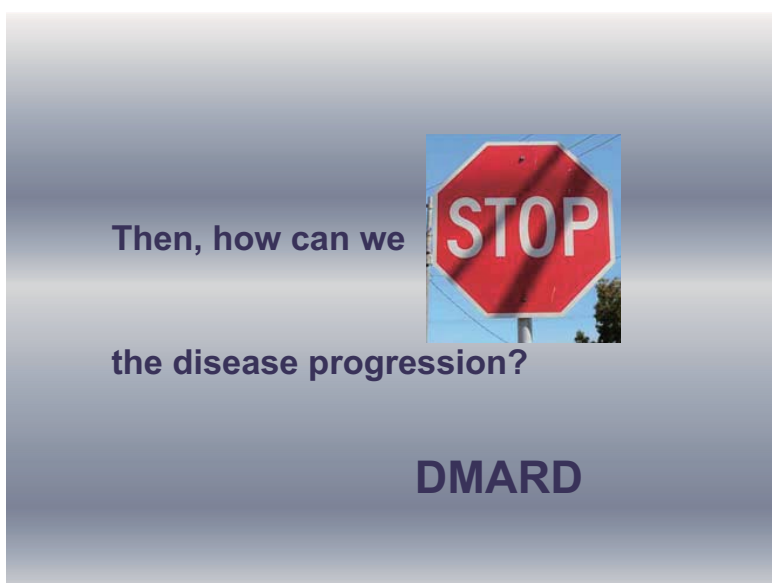
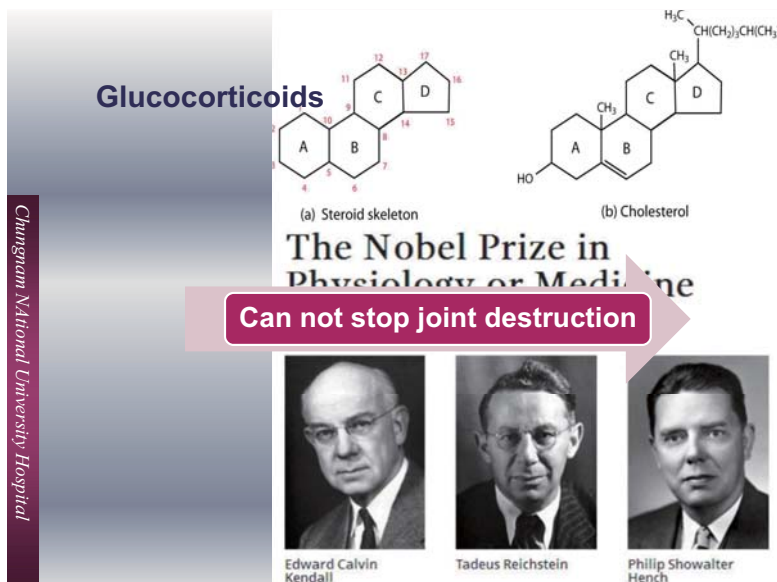
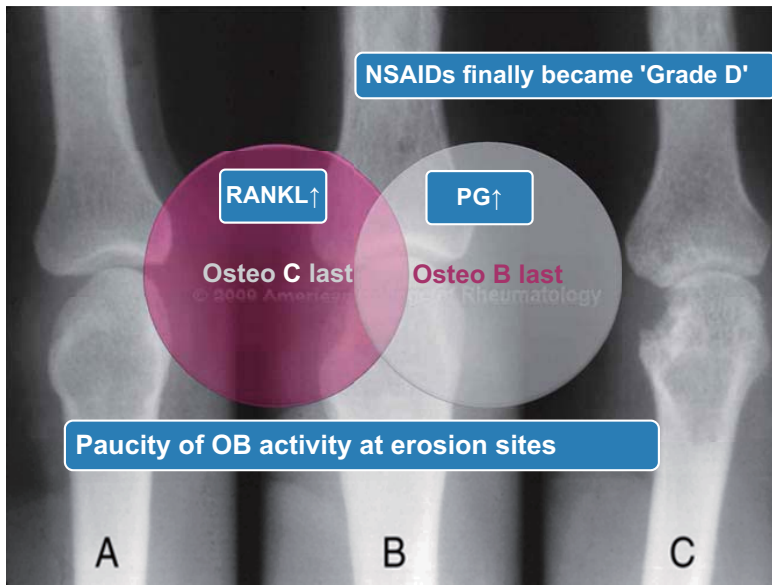
PG is not involved in bone destruction !

NSAIDs fell further into 'Grade C'

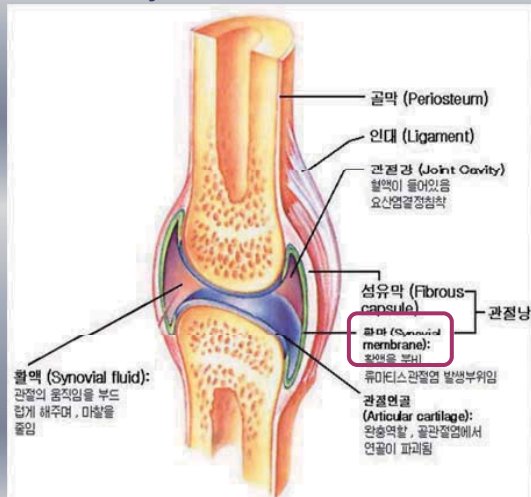


Kirwan et al, J rheumatol, 2001

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Basic structure of joint



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Does obesity cause the arthritis?



Pannus



MTX

Inhibit DNA synthesis

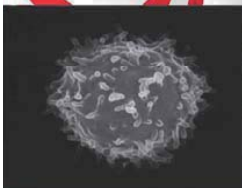
Inhibit cell proliferation

MTX

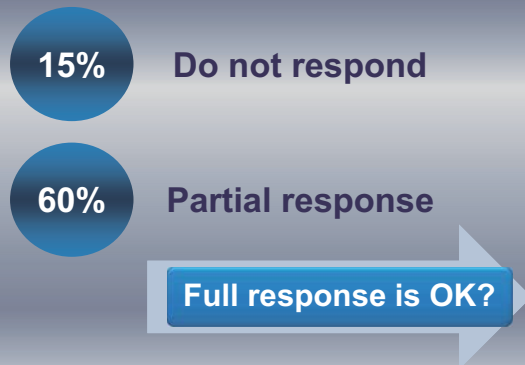
Inhibit cell proliferation



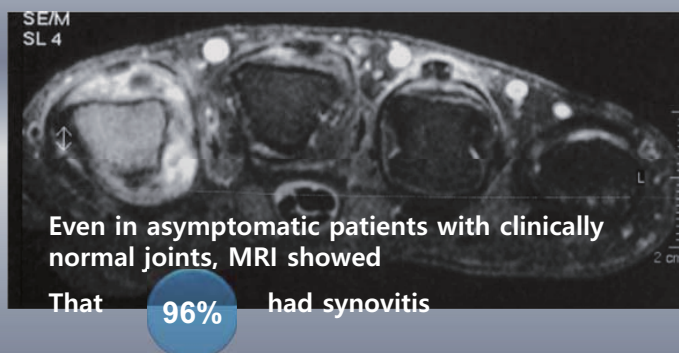
Rapid proliferative cells



Limitaion of MTX



Presence of Significant Synovitis in RA Patients With DMARD–Induced Clinical Remission

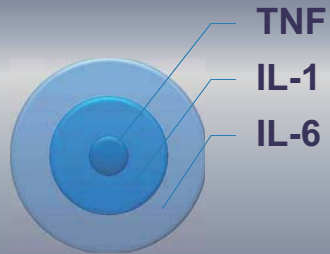


Arthritis & Rheum 2008

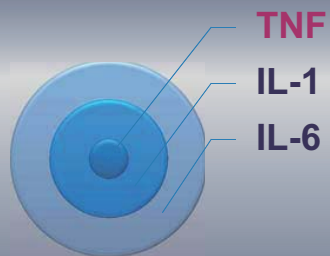
Back to cause of RA?

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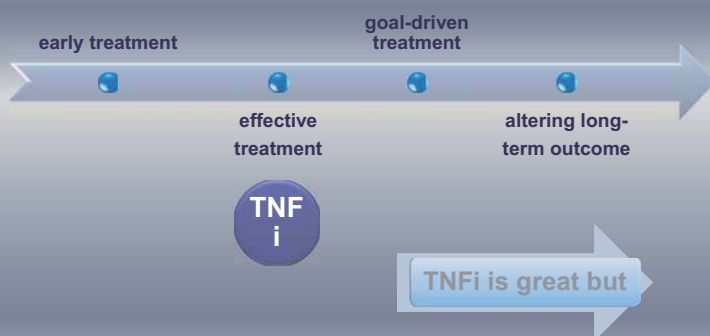
Cytokines are key mediators



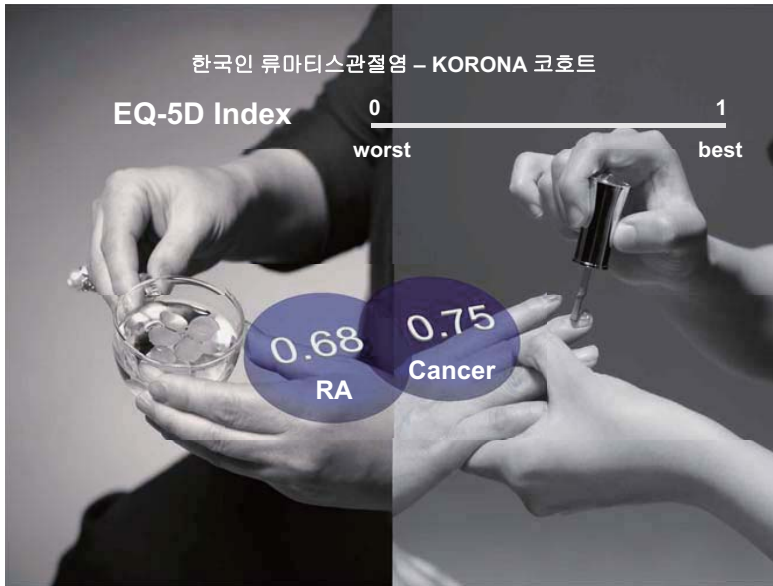
Cytokines are key mediators



Guideline for RA treatment



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Top 200 Drugs for 2003 by Sales

View data for: 2003 | [2004](#) | [2005](#) | [2006](#) | [2007](#) | [2008](#) | [2009](#) | [2010](#) | [2011](#) | [2012](#) (By Units)

Rank	Drug	Current Manufacturer	Total Sales (\$000)	% Change 2002
1	Lipitor	Pfizer Inc	5,538,587	0.0%
2	Prevacid	Takeda Pharmaceuticals North America, Inc	3,568,558	0.0%
3	Zocor	Merck & Co., Inc.	3,277,856	0.0%
4	Nexium	AstraZeneca Pharmaceuticals	2,700,297	0.0%
5	Zolof	Pfizer Inc	2,580,509	0.0%
6	Celebrex	Pfizer Inc	2,206,389	0.0%
7	Zyprexa	Eli Lilly and Company	2,185,718	0.0%
8	Neurontin	Pfizer Inc	2,060,046	0.0%
9	Effexor XR	Wyeth	2,047,193	0.0%
10	Advair Diskus	GlaxoSmithKline	2,008,429	0.0%

Top 100 Drugs for 2012 by Sales

Sales 2012 Units*

Select a range: Year 2012

Rank	Drug	Sales (\$000)	Stats
1	Nexium AstraZeneca Pharmaceuticals	4,197,301	Stats
2	Abilify Otsuka Pharmaceutical Co.	4,124,575	Stats
3	Crestor AstraZeneca Pharmaceuticals	3,488,133	Stats
4	Advair Diskus GlaxoSmithKline	3,412,778	Stats
5	Cymbalta Eli Lilly and Company	3,245,436	Stats
6	Humira Abbott Laboratories	3,096,024	Stats
7	Singulair Merck & Co., Inc.	3,012,777	Stats
8	Enbrel Amgen Inc.	2,904,951	Stats
9	Remicade Schering-Plough Biotech, Inc.	2,784,776	Stats
10	Plavix Bristol-Myers Squibb Company	First Movers	Stats

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TNF
inhibitor



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4. B & T story

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Are you proud of having vertebra?

Producing autoantibodies

Remove all B & T cells?

T

B

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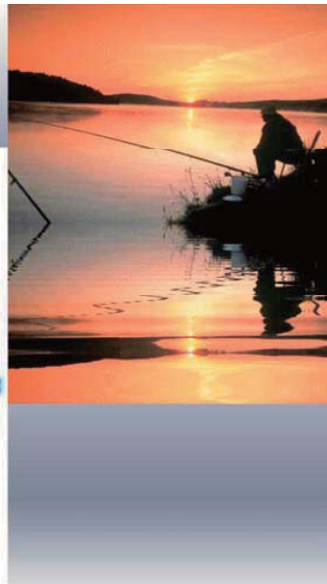
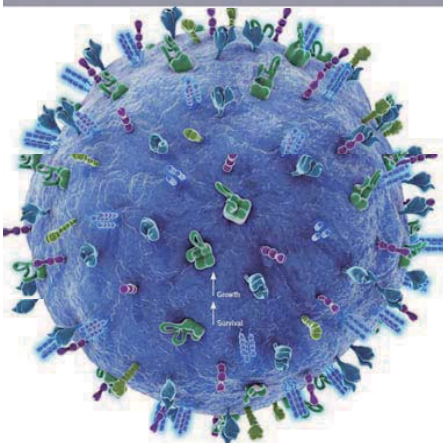
www.shutterstock.com · 98614490



**Smart
era!**

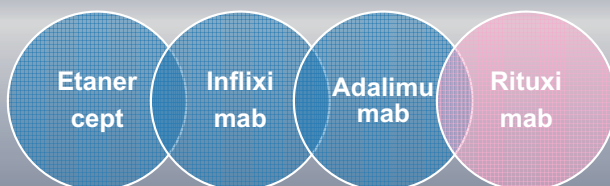
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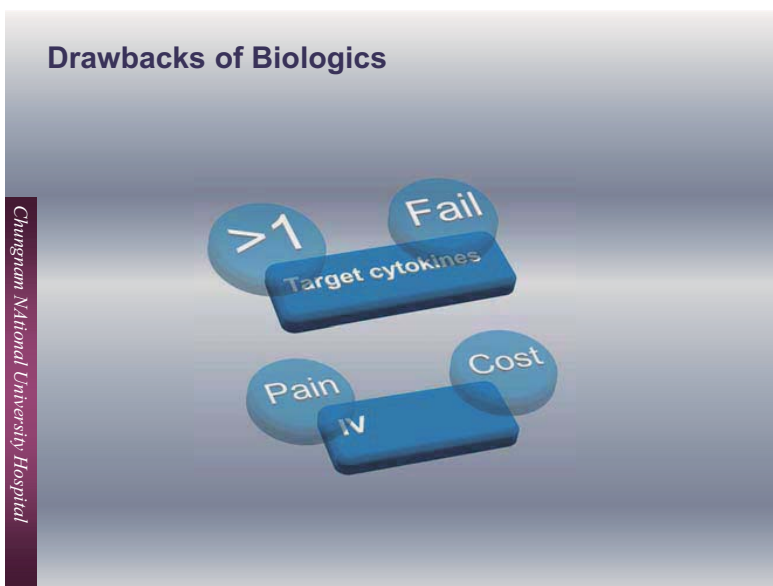
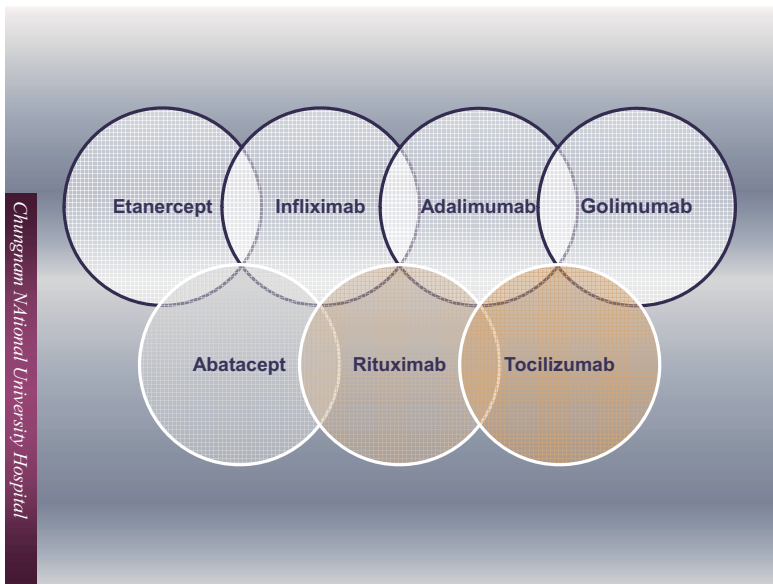
Pathogenic B cell selection



Advent of cell targeted therapy

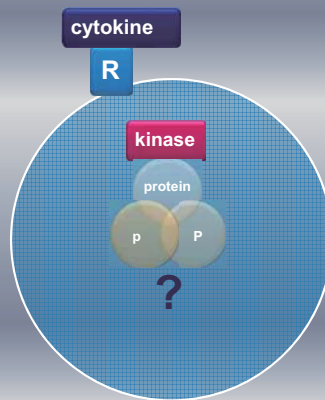
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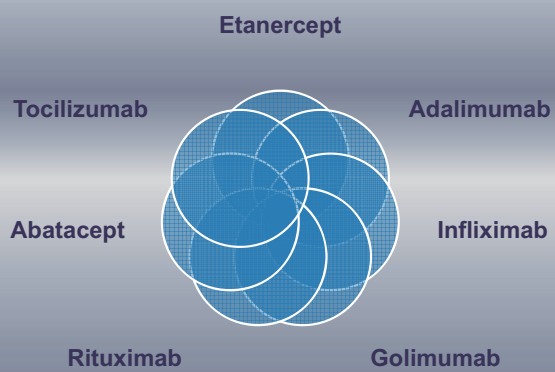
5. Kinase story



Protein kinases

518

Jak



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Window

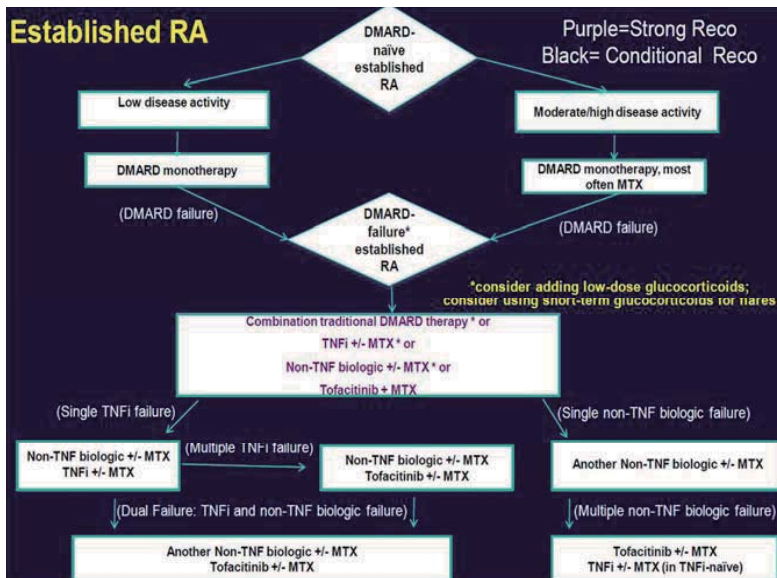
of

opportunity

?

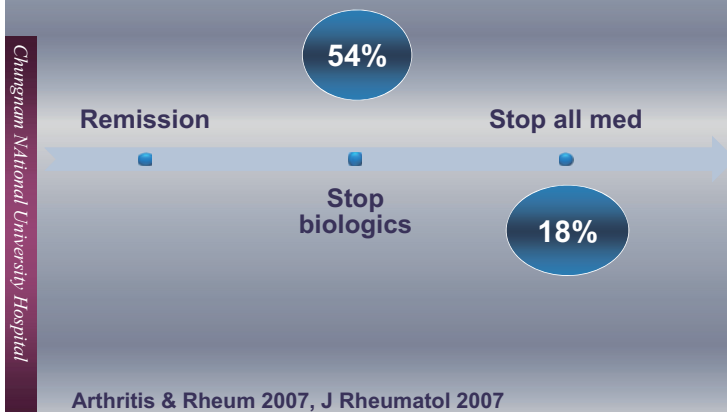
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2015 Recommendations for the Treatment of RA

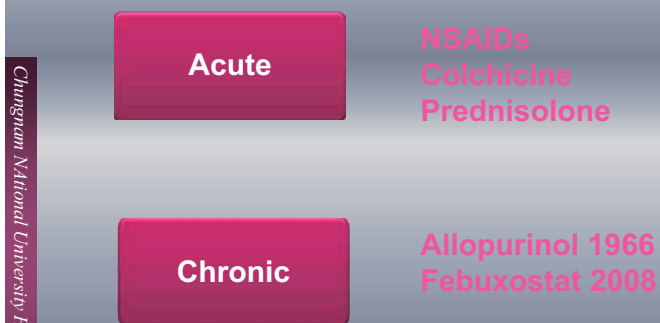


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The outcome of using biologics in RA?

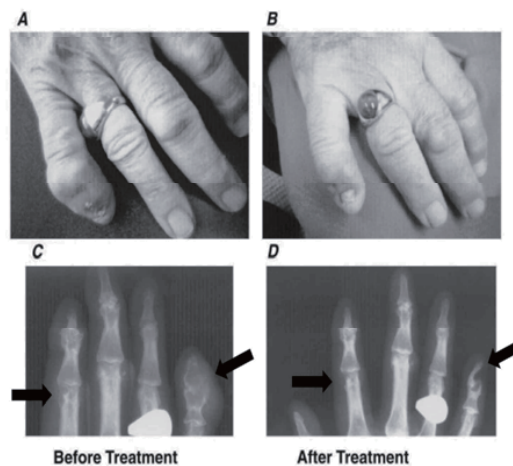


Management of Gout



Pegloticase 치료 12주 후에 통풍결절의 변화

- 남자 70세
- 25년간의 통풍 병력
- 혈중 요산: 9.2mg/dl
- 연간 20회씩 통풍 발작
- 8mg씩 6회 주사, 2주 간격
- 첫번째 주사 24시간내에
- Urate <0.1mg/dl



(Arthritis Rheum 2008;58:3632-4)

Medications that cause rheumatic symptoms

Arthralgia	Myalgia
cimetidine, quinolones	Glucocorticoids, penicillamine, hydroxychloroquine, lovastatin, simvastatin, pravastatin, colchicine, quinolones, cyclosporin
Tendon rupture	Gout
Quinolones, glucocorticoids	Diuretics, aspirin, cytotoxics, cyclosporine, etambutol
Osteonecrosis	Osteopenia
Glucocorticoids, bisphosphonates	Glucocorticoids, chronic heparin, methotrexate

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