

• •



« , » 14 2015 . XVIII

• „ • • • •
: •
• „ • • • •
• „ - • -
• „ • „ • •
/ ,
•

	.....	4
	.....	5
	.....	8
	.....	8
	.....	9
	.....	14
	.....	15
	.....	17
	.....	17
C	.....	21
	.....	21
	().....	24
	().....	24
	(308) ().....	26
-	().....	26
-	().....	27
-	(,4).....	27
	(4).....	28
	/.....	28
	.....	31
	().....	32
( )	.....	32
	().....	33
	().....	33
	.....	34
	-	34
	, -	35
( )	.....	35
(D)	.....	36
(D)	.....	37
( )	.....	38
	.....	40
-	.....	41
	.....	41
	.....	42
	.....	42
	.....	44

-
-
-
-
(PUVA) - +
UVB () -
-
-
-
- -
-
PASI - Psoriasis Area Severity Index

, / :

.

, / :

, EMBASE MEDLINE,

, ; :

).

(

1.

1++	- , ()
1+	- ,
1-	- ,
2++	- .
2+	-
2-	-
3	(:
4	,)

	1++, 1+,
	2++, 1++, 1+
	2+, 2++
D	3 4; 2+

(Good Practice Points – GPPs):

•

.

∴

, .

,

.

.

,

.

∴

«

»;

«

»

,

,

,

.

∴

.

∴
(A-D)

.

-10

L40

L40.0

L40.1

L40.2

[]

L40.3

L40.4

L40.5

L40.8

()

L40.9

-

,

,

,

-

16

4% [64].

1,5 – 1,6%,

– 4,6%

[166].

,

76,2

2014

100

.

0,2

100
15-17

2014

,

0-14

147,8

100

.

2,5

100

.

,

.

,

,

,

,

.

,

1262

,

27%

2

4

,

[119].

,

380

,

2

:

-

6-7

14-17

,

[3].

PSORS1 – PSORS9

PSORS1.

35-50%

[1,197].

23R)

12 (IL 12R),

CDKAL1

23 (IL [9].

[103].

HLA cw*62 [1,9,199].

, Candida albicans,

[4,7,170].

[3,61].

:

[60,100].

[100].

90%

[100].

[100].

1 3 -

[6,60,81]

1

[6,81].

()

(),

, . « » - , , , - . - - . , . , . , . . , , , . . , . . , , . . , . . , .

. R.D.R. Camp, 1999 () :

- ()
- ,
- ()
- - ()
-

1 3
40-41°

[6,].

; () ; [6]

2-5

Audry [6].

(« »)

90%

· :
, , , , -
, , , ,
·
5-7%
[6]. 50%
·
, - . [6].

(30 - 35%
) [7,8]
,
:
1. ;
2. ;
3. ;
, ,

().

().

1.

2.

3.

4.

—

—

—

—

—

—

,

,

).

—

,

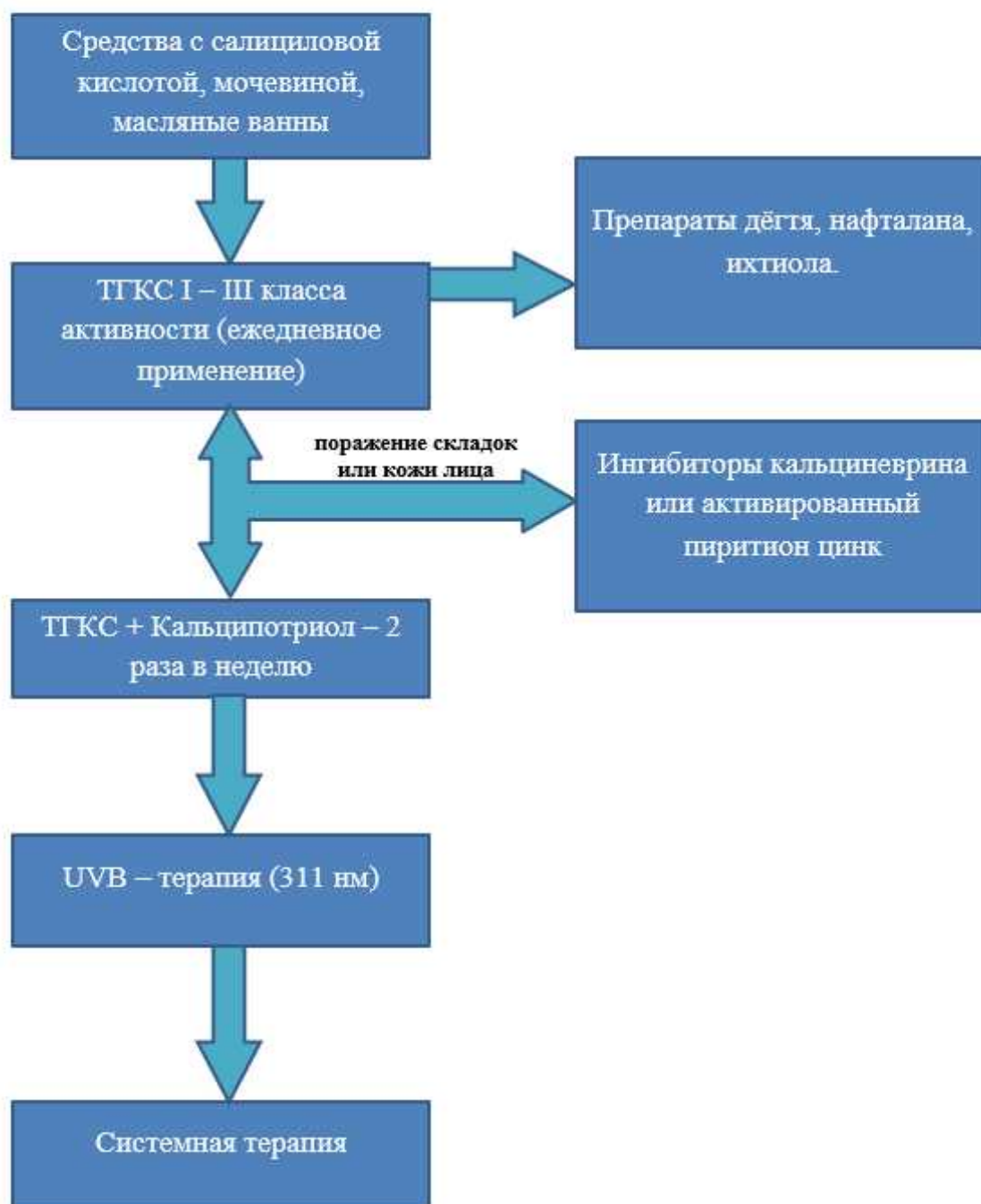
.

.

:

Алгоритм терапии псориаза в детском возрасте

Наружная терапия



.1.

0,5 – 2%

< 5%,

< 10%,

< 20%

— . , , , .

, « »
[9].

, , , .

. , , , .

, , , , , , , , .

, , , , .

. , .

()

IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-10, TNF- , -

3:

3.

(I)	
(II)	
(III)	
(IV)	

I – III .

IV

10-14 ,

()

2

D3.

1.

100

1 % 5%

()

;

6

12 :

2

75

6

12 :

2

50

[167],
 UVB [21,167]. c

6-8 . 1-2 .
 [21,44,167], , 1

, .
 , — (B).
 15 — 2-3 .

1
 .
 — 2 — 1-1,5 .
 —
 , 5
 , 2-3 ; 1-2 — 5 .
 / .
 / .

(C)

— , —
 , —

2-3

UVB –

[167].

(- (-) -).

12 (' -)

, - , : (,

C

: - 200-280 (,);

- (UVB) - 280-320 ; - : - I (UV-AI) -
 - 340-400 - II (UV-AII) - - 320-340 .
 -
 (+ (-)), -
 (230-400).
 -
 320-400 , ,
 12 , ,
 , ,
 . -
 , (-)
 , .
 400 .
 , ,
 . -
 , - ,
 , (- ,
 ,).
 : (), ;
 ; ,
 . - .
 , ,
 . - .

. () ,
 ,
 . ()
 5 . 12 -
 (-)
 . :
 , , (,) ,
 , .
 () (-) .
 ,
 . ()
 (. .) .
 - (,)
 ,)
 () , -
 () .
 24 . , - - 48 .

4. (/ 2) -

(280-320)	2	6	8	1	1
-	0	0	0	00	20
(311)-	2	6	8	1	1
	00	00	00	.000	.200

5.

(. .)

1	,
2	,
3	,
4	().
5	(, .),
6	,

()

(280-320)
50-70%

0,01-0,03 / ².

3-5

5-20%, 0,01-0,02 / ².

2-3-

15-35

()

311

70%

311

50-

0,1-0,2 / ².

3-5

5-20%,

0,05-0,01 / ²,

5.
311)

(

1		24	
2			50-70%
3			30%
			20 %.
			(15%)).
4			50 % , 10 %

，
，
，
311
，
()

311 ， 5-7

：I - 2 ， II - 3 ， III - 4
， IV, V, VI - 5 I - 15 ， II
- 17 ， III - 20 ， IV, V, V, VI - 25
4-6 ， 4-7
) : I - 15 ， II - 20 (， III - 30
， IV, V, VI - 45
I - 2 ， II - 3 ， III - 4 ， IV - 5
3-4 ， 4-5

(308) ()

308

10%

(. . , 2010)

	I-II	III-IV	V-VI
1	100 / 2	150 / 2	200 / 2
2	130 / 2	190 / 2	250 / 2
3	160 / 2	230 / 2	300 / 2
4	190 / 2	270 / 2	350 / 2
5	220 / 2	310 / 2	400 / 2
6	260 / 2	350 / 2	450 / 2

() , , ,)
 , 0,5-1 ,
 - , 2
 2-
 0,5-1 , 25%
 2 15-20
 -
 1,5-2 0,6-0,8 1
 -

() .

		- (/ 2)
-	I-IV	0,5 1 2 3 4 5
()		
- (1 /)	I, II	0,25 0,5 1,0 1,5 2,0 2,5
	III, IV	0,5 1 2 3 4 5

50% . 0,25–0,5

/ ². 2–3 . 2-

30%, 0,25–0,5 / ². .

– 10 / ². .

15–20 . .

- . ()

- . 12 .

15–60 .

20–30% .

/ ². 2–4 . 0,2–0,4

30%, 0,1–0,3 / ². 2–3-

5–8 / ². 20–30 . –

- (,4) .

- 12 . -

0,3% ,

15 . 1 / , 37° ,

(-),

(-).

).

20–30% , 0,2–0,4

/ ². 2–4 , -

2- . 30%, 0,2–0,4

/ ². .

I–II

4,0 / ²,
15-35 .

III-VI

- 8,0 / ².

(4)

220-400 . -
-

(-), ,
50 10 - .
- , - 70 . 10 100 ,
15-20 . 2-3 . 10-
(-) 50 35
30-50 %
4-5 . - 15-20 ,
- 5-15 . - 400-500 ².
,
100 %, , - 50 %, 75%, - 25 %.

/

(, , ,)
(). -
, (, , , , , ,),

200
14

(100 , 2000 / 2),
(1000 / 2).

—
—
—
—
—
—
—
—

I II

150–200;
1000–1500 / 2;

.)

/

.

.

.

,

.

,

,

,

30

,

.

2

.

.

-

,

.

1000 / 2

:

-

;

-

(

)

-

,

;

-

,

,

,

,

(

,

,

),

;

-

:

,

,

,

,

,

,

,

,

,

,

,

,

,

;

-

,

1-2

.

:

- 1-2
 ;
 - , . - ,
 .
 / :
 - ;
 - (-
 -). : ; ;
 - ; ; ; ;
 ; ; ; ; -
 ; ; ;
 - 12 ; (-).
 - (;
 - ; ;
 - ; (;
 -); ;
 - , ; (-);
 - ; (-); ;
 - ; ,
 - ; .

+
 +
 (³311) + **D₃**

2014

52

2007

(, ,

. 100%

(, ,

.),

()

[46,73,90,129,137,155,194].

() [16,17,20,37,57,73,84,107,164,189]

()

, 1 / (35 /).

0,5 / .

()

[16,73,94,110,122,172,188,196,202] .

()

[17,40,46,51,53,70,73,76,85,90,92,93,99,108,117,157].

(4- — 4- — 10-) —

10-30 / 2/ (0.3-1 /).

[73].

[73].

[73].

[73].

[4].

(5)

3

• , - , - ,
• , / ,
• 6 .
• -
• - .
• - .

Varicella Zoster

()
[3,27,59,66,67,68,70,73,80,98,102,103,113,126,131,132,133,159,161,162,173]

(-).

, , .
• , , ,
• , .
(, , , ,).
() , .

, 96 - ,
236 ,
[73],
[73].

). 1 , , 24 , ,
 , , 12 .
 .
 , - 0.8 /
 (50) 1 .
 24 .
 10-25 / 2/ .

(D) [66,84,116,142,158,199]

, IgG1 75% 25% —
 .
 « » «
 » .
 « » 6 .
 « »,

.
 , 15 ,
 .
 :
 • : 0, 2, 6 8
 • 5 / (100) 200 0,9% NaCl.
 • 2 / .
 • () .

1 – 1,5

•
•

- .

:

•
•

, , , ;

, , , , , ,
,

:

(D) [10,18,34,48]

IgG1

55 75

- .

»

13-

«

:

•
•

1

2

40

;

10-25 / 2/ .

:

•
•
•

, , ;

.

,

15 ,

() [11,46,49,68]

IgG1k

148600 ,

40

()

-12

-23.

-12

-23,

-12R- 1,

()

12

18

3-

(CADMUS).

()

12

18

45 .

4

,

12 .

10-25

/ 2/ .

,
,
-
,
,
,
,
,
,
,
15 ,
-
.

2.

Алгоритм системной терапии псориаза в детском возрасте



[9],

[73],

UVB –

[73],

[73],

[73],

-
-
,
:
(),
, , ,
,
, .
, .

PASI 50%,

-
-
-
:
,
;
,
;
,
.

- , -
.
,
,
,

.
/
,
()
()
.

, ,
,
.

, - ,
 , - ,
 .
 , -
 ,
 .
 — (). (-),
 (,) ,
 .

, () ,
 - ,
 ,
 , (. .).
 -
 .

c

SPF 50+.

,
 ,
 ,

,

,

.

.

1. //
-2003 ., - 6,
.29-33
2.
. – ., 2013. - 68 .
3. , 1994, -236 .
4. , ,
.
/ . – 2010, 1. – .35-47.
5.
/ . .
– 2011, 2. – .38-43
6. / ,
. , – ., 2007. – 240 .
7.
/ ,
. – 2010, 5 (12). – .30 – 35.
8.
/ – 2009,
1. – .81-87.
9. – ., 2013. – 634 .
10. A multicenter, randomized, double-dummy, double-blind study evaluating two doses of adalimumab versus methotrexate (MTX) in paediatric subjects with chronic plaque psoriasis. In: ClinicalTrials.gov, Identifier: NCT01251614. Last updated April 8, 2014. URL [http://www.clinicaltrials.gov/ct2/show/NCT01251614?term=adalimumab+p soriasis&rank=8](http://www.clinicaltrials.gov/ct2/show/NCT01251614?term=adalimumab+p%20soriasis&rank=8). (last accessed: 26 June 2014).
11. A Phase 3 Multicenter, Randomized, Double-blind, Placebo-controlled Study Evaluating the of Efficacy and Safety of Ustekinumab in the Treatment of Adolescent Subjects With Moderate to Severe Plaque-

- typePsoriasis (CADMUS). In: ClinicalTrials.gov, Identifier: NCT02166203. Last updated: June 17, 2014. URL <http://www.clinicaltrials.gov/ct2/show/>
12. Abdel Naser MB, Wollina U, El Okby M, El Shiemy S. Psoralen plus ultraviolet A irradiation-induced lentiginos arising in vitiligo: involvement of vitiliginous and normal appearing skin. *Clin Exp Dermatol*. 2004;29:380–2.
 13. Adamski Z, Dudziak M, Zakrzewska K. Etanercept in dermatological practice - authors' own experience in the treatment of psoriasis vulgaris and psoriatic arthritis. *Post Dermatol Alergol* 2011; 28: 435–441.
 14. Ahini RT, Camp NJ, Cork MJ, et al. Novel genetic association between the corneodesmin gene (MHC S) gene and susceptibility to psoriasis. *Hum Mol Genet*. 1999;8:1135-1140.
 15. Alen MH, Veal C, Faassen A, et al. A non-HLA gene within the MHC in psoriasis. *Lancet*. 1999;353:1589-1590.
 16. Alli N, Gungor E, Karakayali G, Lenk N, Artuz F. The use of cyclosporin in a child with generalized pustular psoriasis. *Br J Dermatol* 1998; 139:754–755.
 17. Al-Shobaili H, Al-Khenaizan S. Childhood generalized pustular psoriasis: Successful treatment with isotretinoin. *Pediatr Dermatol* 2007; 24:563–564.
 18. Alvarez AC, Rodriguez-Nevado I, De Argila D et al. Recalcitrant pustular psoriasis successfully treated with adalimumab. *Pediatr Dermatol* 2011;28: 195–197.
 19. Andreben C, Henseler T. Die Erbllichkeit der psoriasis: Eine analyse von 2035 familienanamnesen. *Hautarzt*. 1982;33:214-217.
 20. Armin S, Cahvoshzadeh Z, Karimi A, Tajeddini A, Toosi P. Mucocutaneous candidiasis or psoriasis? A case report. *J Res Med Sci* 2007; 12: 96–99.
 21. Ashcroft DM, Po AL, Williams HC, Griffiths CE. Systematic review of comparative efficacy and tolerability of calcipotriol in treating chronic plaque psoriasis. *BMJ*. 2000 Apr 8;320(7240):963-7.
 22. Asumalahti K, Laitinen T, Itkonen-Vatius R, et al. A candidate gene for psoriasis near HLA-C, HCR (Pg8), is highly polymorphic with a disease associated susceptibility allele. *Hum Mol Genet*. 2000;9(10):1533-1542.
 23. Bahram S, Bresnahan M, Geraghty DE, et al. A second lineage of mammalian major histocompatibility complex class I gene. *Proc Natl Acad Sci USA*. 1994;91:6259-6263.
 24. Bahram S, Mizuki N, Inoko H, et al. Nucleotide sequence of the human MHC class I MIC gene. *Immunogenetics*. 1996;44:80-81.

25. Balak DM, Oostveen AM, Bousema MT et al. Effectiveness and safety of fumaric acid esters in children with psoriasis: a retrospective analysis of 14 patients from The Netherlands. *Br J Dermatology* 2013; 168: 1343–1347.
26. Beattie PE, Lewis-Jones MS. A comparative study of impairment of quality of life in children with skin disease and children with other chronic childhood diseases. *Br J Dermatol.* 2006;155:145–51.
27. Beikert FC, Augustin M, Radtke MA. Etanercept in juvenile psoriasis. *Hautarzt* 2012; 63: 406–410.
28. Beylot C, Puissant A, Bioulac P, et al. Particular clinical features of psoriasis in infants and children. *Acta Dermatol Venereol (Stockh).* 1979;59(87):95-97.
29. Borska L, Fiala Z, Krejsek J, et al. Immunologic changes in TNF-alpha, sE-selectin, sP-selectin, sICAM-1, and IL-8 in pediatric patients treated for psoriasis with the Goeckerman regimen. *Pediatr Dermatol.* 2007;24:607–12.
30. Brandrup F, Hauge M, Henningsen J, et al. 15. Psoriasis in an unselected series of twins. *Arch Dermatol.* 1978;114:874-878.
31. Brenner W, Gschnait F, Mayr WR, et al. HLA B13, B17, B37 and Cw6 in psoriasis vulgaris: association with the age of onset. *Arch Dermatol Res.* 1978;262:337-339.
32. Burden AD, Javed S, Bailey M, et al. Genetics of psoriasis: paternal inheritance and a locus on chromosome 6p. *J Invest Dermatol.* 1998;110:958-960.
33. Burden AD. Identifying a gene for psoriasis on chromosome 6 (Psors 1). *Br J Dermatol.* 2000;143:237-241.
34. Callen JP, Jackson JH. Adalimumab effectively controlled recalcitrant generalized pustular psoriasis in an adolescent. *J Dermatolog Treat* 2005; 16:350–352.
35. Capon F, Novelli G, Samprini M, et al. Searching for psoriasis susceptibility genes in Italy: genome scan and evidence for a new locus on chromosome 1. *J Invest Dermatol.* 1999;112:32-35.
36. Cargill M, Schrodi SJ, Chang M, et al. A large-scale genetic association study confirms IL12B and leads to the identification of IL23R as psoriasis-risk genes. *Am J Hum Genet.* 2007;80:273-290.
37. Chao PH, Cheng YW, Chung MY. Generalized pustular psoriasis in a 6-week-old infant. *Pediatr Dermatol* 2009; 26: 352–354.
38. Chaves YN, Cardoso DN, Jorge PF, Follador I, Oliveira Mde F. Childhood pustular psoriasis: case report. *An Bras Dermatol* 2010; 85: 899–902.

- 39.Cheng L, Zhang SZ, Xiao CY, et al. The A5.1 allele of the major histocompatibility complex chain-related geneA is associated with psoriasis vulgaris in Chinese. *Br J Dermatol*. 2000;143:324-329
- 40.Collin B, Vani A, Ogboli M, Moss C. Methotrexate treatment in 13 children with severe plaque psoriasis. *Clin Exp Dermatol* 2009; 34: 295–298.
- 41.Cordoro KM. Management of childhood psoriasis. *Adv Dermatol*. 2008; 24:125–69.
- 42.Corrales IL, Ramnarine S, Lansang P. Treatment of Childhood Psoriasis with Phototherapy and Photochemotherapy *Clinical Medicine Insights: Pediatrics* 2013:7-33.
- 43.Coven TR, Burack LH, Gilleaudeau R, Keogh M, Ozawa M, Krueger JG. Narrowband UV-B produces superior clinical and histopathological resolution of moderate-to-severe psoriasis in patients compared with broadband UV-B. *Arch Dermatol*. 1997;133:1514–22.
- 44.Darley CR, Cunliffe WJ, Green CM, Hutchinson PE, Klaber MR, Downes N. Safety and efficacy of calcipotriol ointment (Dovonex) in treating children with psoriasis vulgaris. *Br J Dermatol*. 1996;135:390–3.
- 45.De Grujil FR. The fundamental bases of phototherapy. Milan, Italy: OEMF Spa. 1986:153–170.
- 46.de Jager ME, de Jong EM, van de Kerkhof PC, Seyger MM. Efficacy and safety of treatments for childhood psoriasis: a systematic literature review. *J Am Acad Dermatol* 2010; 62: 1013–1030.
- 47.Dhar S, Banerjee R, Agrawal N, Chatterjee S, Malakar R. Psoriasis in children: an insight. *Indian J Dermatol*. 2011;56:262–5.
- 48.Dini V, Barbanera S, Romanelli M. Efficacy of adalimumab for the treatment of refractory paediatric acrodermatitis continua of hallopeau. *Acta Derm Venereol* 2013; 93: 588–589.
- 49.Dixit S, Shumack S, Fischer G. Ustekinumab in the treatment of severe paediatric psoriasis. *Australas J Dermatol* 2013; 54: 147.
- 50.Dogra S, De D. Phototherapy and photochemotherapy in childhood dermatoses. *Indian J Dermatol Venereol Leprol*. 2010;76:521–6.
- 51.Dogra S, Handa S, Kanwar AJ. Methotrexate in severe childhood psoriasis.
- 52.Dogra S, Kaur I. Childhood psoriasis. *Indian J Dermatol Venereol Leprol*. 2010;76:357–65.
- 53.Dogra S, Kumaran MS, Handa S, Kanwar AJ. Methotrexate for generalized pustular psoriasis in a 2-year-old child. *Pediatr Dermatol* 2005; 22:85–86.
- 54.Duffy DL, Spelman LS, Martin NG. Psoriasis in Australian twins. *J Am Acad Dermatol*. 1993;29:428-434.
- 55.Elder JT. Genome- wide association scan yields new insights into the immunopathogenesis of psoriasis. *Genes immun*. 2009;10(3):201-209.

56. Enlund F, Samuelsson L, Enerback C, et al. Psoriasis susceptibility locus in chromosome region 3q21 identified in patients from southwest Sweden *Eur J Hum Genet.* 1999;7:783-790.
57. Ergin S, Ersoy-Evans S, Sahin S, Ozkaya O. Acitretin is a safe treatment option for infantile pustular psoriasis. *J Dermatolog Treat* 2008; 19:341–343.
58. Ersoy-Evans S, Altaykan A, Sahin S, Kolemen F. Phototherapy in childhood. *Pediatr Dermatol.* 2008;25:599–605.
59. Fabrizi G, Guerriero C, Pagliarello C. Etanercept in infants: suberythrodermic, recalcitrant psoriasis in a 22 month-old child successfully treated with etanercept. *Eur J Dermatol* 2007; 17: 245.
60. Farber E.M., Nall L. Childhood psoriasis.// *Cutis.* - 1999 Nov; 64(5):309-14.
61. Farber EM, Bright RD, Nall ML. Psoriasis: a questionnaire survey of 2,144 patients. *Arch Dermatol.* 1968;98:248-259.
62. Farber EM, McClintock Jr RP. A current review of psoriasis. *Calif Med J.* 1968;108:440.
63. Farber EM, Nall L, Watson W. Natural history of psoriasis in 61 twin pairs. *Arch Dermatol.* 1974;109:207-211.
64. Farber EM, Nall ML. Epidemiology: Natural history and genetics. In: 49 Roenigk HH, Maibach HI, eds. *Psoriasis.* 3rd ed. New York: Marcel Dekker; 1998:107-158.
65. Farber EM, Nall ML. The natural history of psoriasis in 5600 patients. *Dermatologica.* 1974;148:1-18.
66. Farnsworth NN, George SJ, Hsu S. Successful use of infliximab following a failed course of etanercept in a pediatric patient. *Dermatol Online J* 2005; 11: 11.
67. Floristan U, Feltes R, Ramirez P, Alonso ML, de Lucas R. Recalcitrant Palmoplantar Pustular Psoriasis Treated with Etanercept. *Pediatr Dermatol* 2011; 28: 349–350.
68. Fotiadou C, Lazaridou E, Giannopoulou C, Ioannides D. Ustekinumab for the treatment of an adolescent patient with recalcitrant plaque psoriasis. *Eur J Dermatol* 2011; 21: 117–118.
69. Fotiadou C, Lazaridou E, Ioannides D. Management of psoriasis in adolescence. *Adolesc Health Med Ther* 2014; 5: 25–34.
70. Fraga NA, Paim MdeF, Follador I, Ramos AN, Rego VR. Refractory erythrodermic psoriasis in a child with an excellent outcome by using etanercept. *An Bras Dermatol* 2011; 86: 144–147.
71. Garg T, Chander R, Mittal S. Familial juvenile generalized pustular psoriasis: response to methotrexate. *Skinmed* 2011; 9: 190–191.

72. Gazit E, Brenner S, Efer T, et al. HLA antigens in patients with psoriasis
Tissue Antigens. 1978;12:195-199.
73. Geel M.J. van, K. Mul, M.E.A. de Jager, P.C.M. van de Kerkhof, E.M.G.J.
de Jong, M.M.B. Seyger Systemic treatments in paediatric psoriasis: a
systematic evidence-based update. J Eur Acad Dermatol Venereol. 2015
Mar;29(3):425-37
74. Gerdes S, Domm S, Mrowietz U. Long-term treatment with fumaric acid
esters in an 11-year-old male child with psoriasis. Dermatology 2011;
222:198–200.
75. Gunther CH, Schmitt J, Wozel G. Successive use of fumaric acid esters
for the treatment of psoriasis vulgaris in a 14-year-old patient. Haut 2004;
15:28–30. (German).
76. Gupta R, Gupta S. Methotrexate-betamethasone weekly oral pulse in
psoriasis. J Dermatolog Treat 2007; 18: 291–294.
77. Haftek M, Simon M, Kanitakis J, et al. Expression of corneodesmin in the
granular layer and stratum corneum of normal and diseased epidermis Br J
Dermatol. 1997;137:864-873.
78. Hellgren L. Psoriasis: The prevalence in sex, age and occupational groups
in total populations in Sweden. Morphology, inheritance and associations
with other skin and diseases. Stockholm: Almqvist and Wiksell;
1967.
79. Henseler T, Christophers E. Psoriasis of early and late onset: characterisation
of two types of psoriasis vulgaris. J Am Acad Dermatol. 1985;13:450-456.
80. Hoang JK, Burruss J. Localized cutaneous *Cryptococcus albidus* infection in
a 14-year-old boy on etanercept therapy. Pediatr Dermatol 2007; 24: 285–
288.
81. Hoger PH, Hamm H. Psoriasis vulgaris in children and adolescents:
Pathogenesis, clinical manifestation and therapy. Monatsschrift fur
Kinderheilkunde 2014; 162: 163–177.
82. Ikaheimo I, Silvennoinen- Kassinen S, Karvonen J, et al. Immunogenetic
profile of psoriasis vulgaris: association with haplotypes A2, B13, Cw6,
DR7, DQA1*0201 and A1, B17, Cw6, DR7, DQA1*0201. Arch Dermatol
Res. 1996;288:363-367.
83. Information for Healthcare Professionals: Tumor Necrosis Factor (TNF)
Blockers (marketed as Remicade, Enbrel, Humira, Cimzia, and
Simponi). URL
[http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafety-
InformationforPatientsandProviders/DrugSafetyInformationforHealthcarePro-
fessionals/ucm174474.htm](http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafety-InformationforPatientsandProviders/DrugSafetyInformationforHealthcareProfessionals/ucm174474.htm). (last accessed: 26 June 2014).

84. Ingram JR, Anstey AV, Piguet V. Combination treatment with a tumour necrosis factor antagonist and an oral retinoid: efficacy in severe acral psoriasis? *Br J Dermatol* 2012; 167: 949–951.
85. Ivker RA, Grin-Jorgensen CM, Vega VK, Hoss DM, Grant-Kels JM. Infantile generalized pustular psoriasis associated with lytic lesions of the bone. *Pediatr Dermatol* 1993; 10: 277–282.
86. Jain VK, Aggarwal K, Jain K, Bansal A. Narrow-band UV-B phototherapy in childhood psoriasis. *Int J Dermatol.* 2007;46:320–2.
87. Jain VK, Bansal A, Aggarwal K, Jain K. Enhanced response of childhood psoriasis to narrow-band UV-B phototherapy with preirradiation use of mineral oil. *Pediatr Dermatol.* 2008;25:559–64.
88. Jenisch S, Koch S, Henseler T, et al. Corneodesmin gene polymorphism demonstrates strong linkage disequilibrium with HLA and association with psoriasis vulgaris. *Tissue Antigens.* 1999;54:439–449.
89. Johnson-Huang LM, Suarez-Farinas M, Sullivan-Whalen M, Gilleaudeau P, Krueger JG, Lowes MA. Effective narrow-band UVB radiation therapy suppresses the IL-23/IL-17 axis in normalized psoriasis plaques. *J Invest Dermatol.* 2010;130:2654–63.
90. Juanqin G, Zhiqiang C, Zijia H. Evaluation of the effectiveness of childhood generalized pustular psoriasis treatment in 30 cases. *Pediatr Dermatol* 1998; 15: 144–146.
91. Jury CS, McHenry P, Burden AD, Lever R, Bilslund D. Narrowband ultraviolet B (UVB) phototherapy in children. *Clin Exp Dermatol.* 2006;31:196–9.
92. Kalla G, Goyal AM. Juvenile generalized pustular psoriasis. *Pediatr Dermatol* 1996; 13: 45–46.
93. Kaur I, Dogra S, De D, Kanwar AJ. Systemic methotrexate treatment in childhood psoriasis: further experience in 24 children from India. *Pediatr Dermatol* 2008; 25: 184–188.
94. Kilic SS, Hacimustafaoglu M, Celebi S, Karadeniz A, Ildirim I. Low dose cyclosporin A treatment in generalized pustular psoriasis. *Pediatr Dermatol* 2001; 18: 246–248.
95. Kim BS, Shin S, Youn JI, Lee YS. Treatment of erythrodermic psoriasis with etretinate. *Ann Dermatol* 1991; 3: 107–111.
96. Kiszewski AE, De Villa D, Scheibel I, Ricachnevsky N. An infant with acrodermatitis continua of Hallopeau: successful treatment with thalidomide and UVB therapy. *Pediatr Dermatol* 2009; 26: 105–106.
97. Kortuem KR, Davis MD, Witman PM, McEvoy MT, Farmer SA. Results of Goeckerman treatment for psoriasis in children: a 21-year retrospective review. *Pediatr Dermatol.* 2010;27:518–24.

98. Kress DW. Etanercept therapy improves symptoms and allows tapering of other medications in children and adolescents with moderate to severe psoriasis. *J Am Acad Dermatol* 2006; 54: S126–S128.
99. Kumar B, Dhar S, Handa S, Kaur I. Methotrexate in childhood psoriasis. *Pediatr Dermatol* 1994; 11: 271–273.
100. Kumar B, Jain R, Sandhu K., et al. Epidemiology of childhood psoriasis: a study of 419 patients from northern India. // *Int J Dermatol*. 2004 Sep; 43(9):654-8.
101. Kurd SK, Gelfand JM. The prevalence of previously diagnosed and undiagnosed psoriasis in US adults: results from NHANES 2003-2004. *J Am Acad Dermatol* 2009; 60: 218–224.
102. Landells I, Paller AS, Pariser D et al. Efficacy and safety of etanercept in children and adolescents aged \geq 8 years with severe plaque psoriasis. *Eur J Dermatol* 2010; 20: 323–328.
103. Langley RG, Paller AS, Hebert AA et al. Patient-reported outcomes in pediatric patients with psoriasis undergoing etanercept treatment: 12-week results from a phase III randomized controlled trial. *J Am Acad Dermatol* 2011; 64: 64–70.
104. Lara-Corrales I, Xi N, Pope E. Childhood psoriasis treatment: evidence published over the last 5 years. *Rev Recent Clin Trials* 2011; 6: 36–43.
105. Lofgren S, Krol A. New therapies in pediatric dermatology. *Curr Opin Pediatr*. 2011;23:399–402.
106. Lomholt G. Psoriasis. Prevalence, spontaneous course and genetics. A census study on the prevalence of skin diseases in the Faroe Islands. Copenhagen: GEC Gad; 1963.
107. Lovell DJ, Reiff A, Ilowite NT et al. Safety and efficacy of up to eight years of continuous etanercept therapy in patients with juvenile rheumatoid arthritis. *Arthritis Rheum* 2008; 58: 1496–1504.
108. Lowenthal KE, Horn PJ, Kalb RE. Concurrent use of methotrexate and acitretin revisited. *J Dermatolog Treat* 2008; 19: 22–26.
109. Luu M, Cordoro KM. The evolving role of biologics in the treatment of pediatric psoriasis. *Skin Therapy Lett* 2013; 18: 1–4.
110. Mahe E, Bodemer C, Pruszkowski A, Teillac-Hamel D, de Prost Y. Cyclosporine in childhood psoriasis. *Arch Dermatol* 2001; 137: 1532–1533.
111. Matthews D, Fry L, Powles A, et al. Evidence that a locus for familial psoriasis maps to chromosome 4q. *Nat Genet*. 1996;14:231-233.
112. Maverakis E, Miyamura Y, Bowen MP, Correa G, Ono Y, Goodarzi H. Light, including ultraviolet. *J Autoimmun*. 2001;34:J247–57.

113. Mazzotta A, Saraceno R, Esposito M, Chimenti S. Etanercept, childhood and long-term safety: a case of five years treatment. *Eur J Dermatol* 2011;21: 776–777.
114. McGonagle D, Tan AL, Benjamin M. The nail as a musculoskeletal appendage -implications for an improved understanding of the link between psoriasis and arthritis. *Dermatology*.2009;218(2):97-102.
115. Menter MA, Cush JM. Successful treatment of pediatric psoriasis with infliximab. *Pediatr Dermatol* 2004; 21: 87–88.
116. Menter MA, Whiting DA, McWilliams J. Resistant childhood psoriasis: an analysis of patients seen in a day-care center. *Pediatr Dermatol*. 1984; 2:8–12.
117. Milano A, Bonifazi E. Psoriasis, arthritis, autoimmune hepatitis and dystrophic calcinosis in a 15-year-old girl. *Eur J Pediatr Dermatol* 2009; 19:109–114.
118. Moretti D, Cianchi I, Vannucci G, Cimaz R, Simonini G. Psoriatic juvenile idiopathic arthritis associated with uveitis: a case report. *Case Rep Rheumatol* 2013; Epub ahead of print.
119. Morris A, Rogers M, Fischer G, Williams K. Childhood psoriasis: a clinical review of 1262 cases. *Pediatr Dermatol*. 2001;18:188–98.
120. Nair R, Stuart P, Henseler TS, et al. Localization of psoriasis susceptibility locus PSORS1 to a 60kb interval telomeric to HLA- C. *Am J Hum Genet*. 2000;66:1833-1844.
121. Nair RP, Henseler T, Jenisch S, et al. Evidence for two psoriasis susceptibility loci (HLA and 17q) and two novel candidate regions (16p, 20p) by genome wide scan. *Hum Mol Genet*. 1997;6:1349-1356.
122. Nakamura S, Hashimoto Y, Igawa S et al. Childhood generalized pustular psoriasis treated by preprandial ciclosporin administration: serum cytokine pattern during the course of the disease. *Clin Exp Dermatol* 2009; 34:e1023–e1024.
123. Naldi L, Griffiths CE. Traditional therapies in the management of moderate to severe chronic plaque psoriasis: an assessment of the benefits and risks. *Br J Dermatol*. 2005;152:597–615.
124. [NCT02166203?term=ustekinumab+psoriasis&rank=8](https://clinicaltrials.gov/ct2/show/study/NCT02166203?term=ustekinumab+psoriasis&rank=8). (last accessed: 26 June 2014).
125. Oka A, Tamiya G, Ota M, et al. Association analysis using refined microsatellite markers localises a susceptibility locus for psoriasis vulgaris within a 111kb segment telomeric to the the HLA- C gene. *Hum Mol Genet*. 1999;8:2165-2170.
126. Osorio F, Magina S. Phototherapy and photopheresis: old and new indications. *Expert Rev Dermatol*. 2011;6:613–23.

127. Otten MH, Prince FH, Ten Cate R et al. Tumour necrosis factor (TNF)-blocking agents in juvenile psoriatic arthritis: are they effective? *Ann Rheum Dis* 2011; 70: 337–340.
128. Oxford Centre for Evidence-Based Medicine Levels of Evidence. Homepage (May 2001). URL <http://www.cebm.net/index.aspx?o=1025>. (lastaccessed: 19 February 2009).
129. Pacifico L, Renzi AM, Chiesa C. Acute guttate psoriasis after streptococcal scarlet fever. *Pediatr Dermatol* 1993; 10: 388–389.
130. Paller AS, Eichenfield LF, Langley RG et al. Subgroup analyses of etanercept in pediatric patients with psoriasis. *J Am Acad Dermatol* 2010; 63:e38–e41.
131. Paller AS, Siegfried EC, Eichenfield LF et al. Long-term etanercept in pediatric patients with plaque psoriasis. *J Am Acad Dermatol* 2010; 63:762–768.
132. Paller AS, Siegfried EC, Langley RG et al. Etanercept treatment for children and adolescents with plaque psoriasis. *N Engl J Med* 2008; 358: 241–251.
133. Papoutsaki M, Costanzo A, Mazzotta A, Gramiccia T, Soda R, Chimenti S. Etanercept for the treatment of severe childhood psoriasis. *Br J Dermatol* 2006; 154: 181–183.
134. Parisi R, Symmons DP, Griffiths CE, Ashcroft DM. Global epidemiology of psoriasis: a systematic review of incidence and prevalence. *J Invest Dermatol* 2013; 133: 377–385.
135. Pasic A, Ceovic R, Lipozencic J, et al. Phototherapy in pediatric patients. *Pediatr Dermatol*. 2003;20:71–7.
136. Pathak, MA, Jimbow, K, Szabo, G, et al: Sunlight and melanin pigmentation. In: Smith KC (ed.). *Photochemical and Photobiological Reviews* 1976, Plenum Press, New York. pp 211–39.
137. Patrizi A, Costa AM, Fiorillo L, Neri I. Perianal streptococcal dermatitis associated with guttate psoriasis and/or balanoposthitis: a study of five cases. *Pediatr Dermatol* 1994; 11: 168–171.
138. Pavicic Z, Kmet-Vizitin P, Kansky A. Etreinate in treating juvenile generalized pustular psoriasis. In Farber EM, Cox AJ, eds. *Proceedings of the 4th international symposium on psoriasis*, Stanford University. University Press, Stanford (CA), 1986: 467.
139. Pavlovsky M, Baum S, Shpiro D, Pavlovsky L, Pavlotsky F. Narrow band UVB: is it effective and safe for paediatric psoriasis and atopic dermatitis? *J Eur Acad Dermatol Venereol*. 2011;25:727–9.

140. Pearce DJ, Stealey KH, Balkrishnan R, Fleischer AB Jr, Feldman SR. Psoriasis treatment in the United States at the end of the 20th century. *Int J Dermatol*. 2006;45:370–4.
141. Pedersen OB, Svendesen AJ, Ejstrup L. et al. On the heritability of psoriatic arthritis. Disease concordance among monozygotic and dizygotic twins. *Ann Rheum Dis* 2008;67(10):1417-1421.
Pediatr Dermatol 2004; 21: 283–284.
142. Pereira TM, Vieira AP, Fernandes JC, Antunes H, Basto AS. Anti-TNF-alpha therapy in childhood pustular psoriasis. *Dermatology* 2006; 213: 350–352.
143. Pootrakul L, Kalb RE. The management of psoriasis in children and adolescents. *G Ital Dermatol Venereol*. 2010;145:259–68.
144. Posso-De Los Rios CJ, Pope E, Lara-Corrales I. A Systematic Review of Systemic Medications for Pustular Psoriasis in Pediatrics. *Pediatr Dermatol* 2014; 31: 430–439.
145. Pugashetti R, Koo J. Phototherapy in pediatric patients: choosing the appropriate treatment option. *Semin Cutan Med Surg*. 2010;29:115–20.
146. Pugashetti R, Koo J. Phototherapy in Pediatric Patients: Choosing the Appropriate Treatment Option.-2010.-Published by Elsevier Inc. 115 doi:10.1016/j.sder.
147. Racz E, Kurek D, Kant M, et al. GATA3 expression is decreased in psoriasis and during epidermal regeneration; induction by narrow-band UVB and IL-4. *PLoS One*. 2011;6:e19806.
148. Racz E, Prens EP, Kant M, et al. Narrowband ultraviolet B inhibits innate cytosolic double-stranded RNA receptors in psoriatic skin and keratinocytes. *Br J Dermatol*. 2011;164:838–47.
149. Racz E, Prens EP, Kurek D, et al. Effective treatment of psoriasis with narrow-band UVB phototherapy is linked to suppression of the IFN and Th17 pathways. *J Invest Dermatol*. 2011;131:1547–58.
150. Radtke MA, Folster-Holst R, Beikert F, Herberger K, Augustin M. Juvenile psoriasis: rewarding endeavours in contemporary dermatology and pediatrics. *G Ital Dermatol Venereol*. 2011;146:31–45.
151. Rahman SI, Siegfried E, Flanagan KH, Armbrecht ES. The methotrexate polyglutamate assay supports the efficacy of methotrexate for severe inflammatory skin disease in children. *J Am Acad Dermatol* 2014; 70: 252–256.
152. Ramanan AV, Whitworth P, Baildam EM. Use of methotrexate in juvenile idiopathic arthritis. *Arch Dis Child* 2003; 88: 197–200.
153. Raychaudhuri SP, Gross J. A comparative study of pediatric onset psoriasis with adult onset psoriasis. *Pediatr Dermatol*. 2000;17:174–8.
154. Raychaudhuri SP, Gross J. A comparative study of pediatric onset psoriasis with adult onset psoriasis. *Pediatr Dermatol* 2000; 17: 174–178.

155. Rosenberg EW, Noah PW, Zanolli MD, Skinner RB Jr, Bond MJ, Crutcher N. Use of rifampin with penicillin and erythromycin in the treatment of psoriasis. Preliminary report. *J Am Acad Dermatol* 1986; 14: 761–764.
156. Rosinska D, Wolska H, Jablonska S, Konca I. Etretnate in severe psoriasis of children. *Pediatr Dermatol* 1988; 5: 266–272.
157. Rossi-Semerano L, Piram M, Chiaverini C, De Ricaud D, Smahi A, Kone-Paut I. First clinical description of an infant with interleukin-36-receptor antagonist deficiency successfully treated with anakinra. *Pediatrics* 2013;132: e1043–e1047.
158. Rott S, Kster RM, Mrowietz U. Successful treatment of severe psoriatic arthritis with infliximab in an 11-year-old child suffering from linear psoriasis along lines of Blaschko. *Br J Dermatol* 2007; 157:191–192.
159. Ruiz-Villaverde R, Sanchez-Cano D, Abalos-Medina G. Adolescent plaque psoriasis: our experience using etanercept. *J Eur Acad Dermatol Venereol* 2009; 23: 976–977.
160. Russell TJ, Schultes LM, Kuban DJ. Histocompatibility (HLA) antigens associated with protiasis. *N Engl J Med.* 1972;287:738-743.
161. Sachdev A, Shwayder T. Suspected rapid-onset neutropenia following etanercept use: disproved following rechallenge and lessons to be learned. *Int J Dermatol* 2013; 52: 1287–1288.
162. Safa G, Loppin M, Bousser AM, Barbarot S. Etanercept in a 7-year-old boy with severe and recalcitrant psoriasis. *J Am Acad Dermatol* 2007; 56:S19–S20.
163. Sage RJ, Lim HW. UV-based therapy and vitamin D. *Dermatol Ther.* 2010; 23:72–81.
164. Salleras M, Sanchez-Regana M, Umbert P. Congenital erythrodermic psoriasis: case report and literature review. *Pediatr Dermatol* 1995; 12:231–234.
165. Sarkar S, Das K, Roychoudhury S, Shrimal A. Pseudotumor cerebri in a child treated with acitretin: a rare occurrence. *Indian J Pharmacol* 2013; 45: 89–90.
166. Schachner L, Ling NS, Press S. A statistical analysis of a pediatric dermatology clinic. *Pediatr Dermatol.* 1983;1:157.
167. Schachner L.A., Hansen R.C. *Pediatric dermatology / Fourth Edition.* – V.1 – 2. - 2011.
168. Schon MP, Boehncke WH. Psoriasis. *N Engl J Med.* 2005;352:1899–912.

169. Schunter F, Schieferstein G. HLA antigene bei psoriasis vulgaris. *Hautarzt*. 1974;25:82.
170. Seignalet J, Clot J, Guilhou JJ, et al. HLA antigens and some immunological parameters in psoriasis. *Transitive Antigens*. 1974;4:59.
171. Shah KN. Diagnosis and treatment of pediatric psoriasis: current and future. *Am J Clin Dermatol* 2013; 14: 195–213.
172. Shetty GJ, Dhurat RS, Ovhal A, Jerajani HR. Childhood pustular psoriasis successfully treated with sequential therapy. *Eur J Pediatr Dermatol* 2008;18: 213–216.
173. Siegfried EC, Eichenfield LF, Paller AS, Pariser D, Creamer K, Kricorian G. Intermittent etanercept therapy in pediatric patients with psoriasis. *J Am Acad Dermatol* 2010; 63: 769–774.
174. Simon M, Montezin M, Guerrin M, et al. Characterisation and purification of human corneodesmin, an epidermal basic glycoprotein associated with corneocyte-specific modified desmosomes. *J Biol Chem*. 1997;272:31770-31776.
175. Stahle M, Atakan N, Boehncke WH et al. Juvenile psoriasis and its clinical management: a European expert group consensus. *J Dtsch Dermatol Ges* 2010; 8: 812–818.
176. Steeman ASM, Balak DMW, Seyger MMB, Thio HB, Bousema MT. Fumaraten bij een meisje van vijftien jaar met psoriasis!. *Nederlands Tijdschrift voor Dermatologie en Venereologie* 2012; 22: 308–310.
177. Stern RS, Nichols KT. Therapy with orally administered methoxsalen and ultraviolet A radiation during childhood increases the risk of basal cell carcinoma. The PUVA Follow-up Study. *J Pediatr*. 1996;129:915–7.
178. Sticherling M, Augustin M, Boehncke WH et al. Therapy of psoriasis in childhood and adolescence - a German expert consensus. *J Dtsch Dermatol Ges* 2011; 9: 815–823.
179. Sticherling M. Children and adolescents with psoriasis. What therapy is recommended? *Hautarzt* 2012; 63: 192–201.
180. Swanbeck G, Inerot A, Martinsson T, et al. Genetic counselling in psoriasis: empirical data on psoriasis among first-degree relatives of 3095 psoriatic probands. *Br J Dermatol*. 1997 137(6):939-942.
181. Tan AI, Benjamin M, Toumi H, et al. The relationship between the extensor tendon enthesis and the nail in distal interphalangeal joint disease in psoriatic arthritis - a high-resolution MRI and histological study. *Rheumatology*. 2007;46(2):253-256.

182. Tan E, Lim D, Rademaker M. Narrowband UVB phototherapy in children: A New Zealand experience. *Australas J Dermatol*. 2010;51:268–73.
183. Tay YK, Morelli JG, Weston WL. Experience with UVB phototherapy in children. *Pediatr Dermatol*. 1996;13:406–9.
184. Teran CG, Teran-Escalera CN, Balderrama C. A severe case of erythrodermic psoriasis associated with advanced nail and joint manifestations: a case report. *J Med Case Rep* 2010; 4: 179.
185. Tiilikainen A, Lassus A, Karvonen J, et al. Psoriasis and HLA Cw6. *Br J Dermatol*. 1980;102:179-184.
186. Tiwari JL, Lowe NJ, Abramovits W, et al. Association of psoriasis with HLA- DR7. *Br J Dermatol*. 1982;106: 227-230.
187. Tomfohrde J, Silverman A, Barnes R, et al. Gene for familial psoriasis susceptibility mapped to the distal end of human chromosome 17q. *Science*. 1994;264:1141-1145.
188. Torchia D, Terranova M, Fabbri P. Photosensitive psoriasis in a vitiligo patient. *J Dermatol* 2006; 33: 880–883.
189. Trembath RS, Clough RL, Rosbotham JL, et al. Identification of a major susceptibility locus on chromosome 6p and evidence for further disease loci revealed by a two stage genome wide search in psoriasis. *Hum Mol Genet*. 1997;6:813-820.
190. Umezawa Y, Mabuchi T, Ozawa A. Generalized pustular psoriasis in a child: observation of long-term combination therapy with etretinate and calcipotriol for 16 years. *Pediatr Dermatol* 2012; 29: 206–208.
191. Vahavihu K, Ala-Houhala M, Peric M, et al. Narrowband ultraviolet B treatment improves vitamin D balance and alters antimicrobial peptide expression in skin lesions of psoriasis and atopic dermatitis. *Br J Dermatol*. 2010;163:321–8.
192. van de Kerkhof PC. Generalized pustular psoriasis in a child. *Dermatologica* 1985; 170: 244–248.
193. van der Rhee HJ, van Gelderen HH, Polano MK. Is the use of Ro 10-9359 (Tigason) in children justified? *Acta Derm Venereol* 1980; 60: 274–275.
194. Vincent F, Ross JB, Dalton M, Wort AJ. A therapeutic trial of the use of penicillin V or erythromycin with or without rifampin in the treatment of psoriasis. *J Am Acad Dermatol* 1992; 26: 458–461.
195. Wahba A, Cohen H. Therapeutic trials with oral colchicine in psoriasis. *Acta Derm Venereol* 1980;

196. Wasilewska A, Zoch-Zwierz WM, Tenderenda E, Szynaka B. IgA nephropathy in a girl with psoriasis and seronegative arthritis. *Pediatr Dermatol* 2008; 25: 408–409.
197. Watson W, Cann HM, Farber EM, et al. The genetics of psoriasis. *Arch Dermatol*. 1972;105:197-207.
198. Weatherhead SC, Farr PM, Jamieson D, et al. Keratinocyte apoptosis in epidermal remodeling and clearance of psoriasis induced by UV radiation. *J Invest Dermatol*. 2011;131:1916–26.
199. Weishaupt C, Metze D, Luger TA, Stander S. Treatment of pustular psoriasis with infliximab. *J Dtsch Dermatol Ges* 2007; 5: 397–399.
200. White SH, Newcomer VD, Mickey ER, et al. Disturbance of HLA antigen frequency in psoriasis. *N Engl J Med*. 1972;287:740.
201. Wright NA, Piggott CD, Eichenfield LF. The role of biologics and other systemic agents in the treatment of pediatric psoriasis. *Semin Cutan Med Surg* 2010; 29: 20–27.
202. Xiao T, Li B, He CD, Chen HD. Juvenile generalized pustular psoriasis. *J Dermatol* 2007; 34: 573–576.
203. Zachariae H, Kragballe K, Herlin T. Colchicine in generalized pustular psoriasis: clinical response and antibody-dependent cytotoxicity by monocytes and neutrophils. *Arch Dermatol Res* 1982; 274: 327–333.
204. Zamberk P, Velazquez D, Campos M, Hernanz JM, Lazaro P. Paediatric psoriasis-narrowband UVB treatment. *J Eur Acad Dermatol Venereol*. 2010;24:415–9.
205. Zhou Y, Chaplin DD. Identification in the HLA class I region of a gene expressed late in keratinocyte differentiation. *Proc Natl Acad Sci USA*. 1993;90:9470-9474