

doi: 10.13241/j.cnki.pmb.2018.17.033

沙利度胺治疗银屑病的疗效及对血清 TNF- α 、VEGF 和 bFGF 的影响 *

文 莉¹ 周 娇² 金玉华³ 刘绪荣³ 汪 萍³

(1 湖北省随州市中心医院 / 湖北医药学院附属随州医院科教科 湖北 随州 441399; 2 湖北省随州市中心医院 / 湖北医药学院附属随州医院供血科 湖北 随州 441399; 3 湖北省随州市中心医院 / 湖北医药学院附属随州医院皮肤科 湖北 随州 441399)

摘要 目的:探讨沙利度胺治疗银屑病的疗效及对患者血清肿瘤坏死因子- α (TNF- α)、血管内皮生长因子(VEGF)和碱性成纤维细胞生长因子(bFGF)的影响。**方法:**选择2014年6月至2016年6月我院收治的80例中重度寻常型银屑病患者为研究对象,将其完全随机化分为实验组和对照组,各40例。实验组口服沙利度胺,对照组口服甲氨蝶呤,均治疗10周。采用银屑病皮损面积和严重指数评分标准(PASI评分)评价治疗效果,采用酶联免疫吸附试验(ELISA)测定血清TNF- α 、VEGF和bFGF水平,并进行安全性评价。**结果:**实验组治疗有效率为72.50%,高于对照组的47.50%,而不良反应发生率为5.00%,低于对照组的20.00%,差异具有统计学意义($P<0.05$)。两组治疗后血清TNF- α 、VEGF和bFGF水平明显低于治疗前,且实验组治疗后血清TNF- α 、VEGF和bFGF水平低于对照组,差异具有统计学意义(均 $P<0.05$)。**结论:**沙利度胺治疗银屑病具有较好疗效,且不良反应发生率较低,其作用机制可能与抑制患者血清中TNF- α 、VEGF和bFGF的表达有关。

关键词:银屑病;沙利度胺;肿瘤坏死因子- α ;血管内皮生长因子;碱性成纤维细胞生长因子

中图分类号:R758.63 **文献标识码:**A **文章编号:**1673-6273(2018)17-3352-04

Psoriasis: Efficacy of Thalidomide and Its Influence on Levels of Serum TNF- α , VEGF and bFGF*

WEN Li¹, ZHOU Jiao², JIN Yu-hua³, LIU Xu-rong³, WANG Ping³

(1 Department of Science and Education, Suizhou Central Hospital of Hubei Province/Suizhou Hospital Affiliated to Hubei University of Medicine, Suizhou, Hubei, 441399, China; 2 Department of Blood Supply, Suizhou Central Hospital of Hubei Province/Suizhou Hospital Affiliated to Hubei University of Medicine, Suizhou, Hubei, 441399, China; 3 Department of Dermatology, Suizhou Central Hospital of Hubei Province/Suizhou Hospital Affiliated to Hubei University of Medicine, Suizhou, Hubei, 441399, China)

ABSTRACT Objective: To investigate the efficacy of thalidomide in the treatment of psoriasis and its influence on the level of serum tumor necrosis factor- α (TNF- α), vascular endothelial growth factor (VEGF) and basic fibroblast growth factor (bFGF). **Methods:** A total of 80 patients with moderate and severe psoriasis vulgaris, who were treated in Suizhou Central Hospital of Hubei Province from June 2014 to June 2016, were selected and were randomly divided into experimental group($n=40$) and control group($n=40$). Thalidomide was given to the experimental group orally; methotrexate was given to the control group orally, the two groups were treated for 10 weeks. The effects of treatment were evaluated by psoriasis area and severity index score (PASI score). The levels of serum TNF- α , VEGF and bFGF were determined by enzyme linked immunosorbent assay (ELISA), and the safety evaluation were carried out. **Results:** The effective rate(72.50%) of the experimental group was higher than that(47.50%) of the control group, and the incidence of adverse reactions (5.00%) in the experimental group was lower than that (20.00%) in the control group, the difference was statistically significant ($P<0.05$). The levels of serum TNF- α , VEGF and bFGF in the two groups after treatment were significantly lower than those before treatment, and the levels of serum TNF- α , VEGF and bFGF in the experimental group were lower than those in the control group, and the differences were statistically significant (all $P<0.05$). **Conclusion:** Thalidomide has good efficacy and lower incidence of adverse reactions in the treatment of psoriasis. Its mechanism of action may be related to its inhibition of the expression of TNF- α , VEGF and bFGF in the serum of patients with psoriasis.

Key words: Psoriasis; Thalidomide; TNF- α ; VEGF; Bfgf

Chinese Library Classification (CLC): R758.63 **Document code:** A

Article ID: 1673-6273(2018)17-3352-04

前言

银屑病是一种慢性、炎症性、复发性皮肤病,其主要特征为表皮过度增殖、伴随角化不全及真皮淋巴细胞浸润,临床表现

* 基金项目:湖北省教育厅科学研究计划项目(B2014063);湖北省科技厅科技计划青年基金项目(2014CFB364)

作者简介:文莉(1977-),女,硕士,副主任医师、副教授,从事皮肤肿瘤、美容激光方面的研究,E-mail:tsdtda@163.com

(收稿日期:2017-10-23 接受日期:2017-11-19)

为皮肤表面出现红色的丘疹或斑块,表面覆有银白色鳞屑^[1,2]。相关流行病学调查显示,全球有超过 1.25 亿名的银屑病患者,且这个数字仍在快速增长^[3,4]。有研究认为其发病机制与炎症反应和血管新生有关,但尚未有明确的定论^[5,6]。血清肿瘤坏死因子- α (Tumor necrosis factor- α , TNF- α) 又称恶质素,主要是由巨噬细胞分泌的多肽调节因子,其具有广泛的生物活性,与免疫炎症反应有着密切的关系^[7-9]。有组织病理结果显示^[10],银屑病患者真皮乳头血管异常。血管内皮生长因子 (Vascular endothelial growth factor, VEGF) 和碱性成纤维细胞生长因子 (Basic fibroblast growth factor, bFGF) 为内皮细胞分泌的具有诱导血管生成的细胞因子,与新生血管有关。治疗银屑病的常见药物有甲氨蝶呤等,虽然取得了较好的疗效,但因副作用大而应用受限,因此寻找一种疗效显著,且副作用小的治疗药物是临床研究热点^[11,12]。沙利度胺是一种人工合成的谷氨酸衍生物,具有免疫调节、抑制新生血管生成等作用^[13,14]。为此,本研究旨在探讨沙利度胺治疗银屑病的疗效与安全性,及对血清 TNF- α 、VEGF 和 bFGF 水平的影响,为临床治疗银屑病提供依据。

1 资料与方法

1.1 一般资料

选择 2014 年 6 月至 2016 年 6 月我院收治的 80 例中重度型银屑病患者为研究对象。纳入标准:所有患者均符合《我国新版银屑病诊疗指南解读》^[15]对于寻常型银屑病的描述,均为进展期;年龄 ≥ 18 周岁;银屑病皮损面积和严重指数评分标准 (PASI 评分) ≥ 10 ;四周内未接受全身糖皮质激素、维 A 酸类药物、免疫抑制剂及光化学疗法等治疗,皮损处无局部用药;皮损面积 $\geq 30\%$ 。排除标准:孕妇、哺乳期妇女及备孕妇女;有心、脑、肝、肾急慢性疾病者;有严重的免疫系统和血液系统疾病者;有精神疾病者;对免疫调节剂和免疫抑制剂过敏者;依从性差者。将其完全随机化分为实验组 and 对照组,每组 40 例。实验组中男性 24 例,女性 16 例;年龄 18~65 岁,平均 (45.68 ± 8.92) 岁;病程 3~12 个月,平均 (6.58 ± 1.93) 个月。对照组男性 20 例,女性 20 例;年龄 18~65 岁,平均 (45.96 ± 8.43) 岁;病程 3~12 个月,平均 (6.27 ± 1.66) 个月。两组一般资料之间的差异无统计学意义 ($P > 0.05$),具有可比性。本研究已通过医院伦理委员会批准,所有患者均签署治疗知情书。

1.2 方法

两组患者均外用凡士林乳膏,每日 2 次,均匀涂抹于皮疹

处。实验组口服沙利度胺片 (商品名:反映亭,常州制药有限公司,国药准字:H32026130,规格:50 mg) 100 mg/次,每日两次,治疗 10 周。对照组口服甲氨蝶呤 (商品名:信谊甲氨蝶呤,上海上药信谊药厂有限公司,国药准字:H31020644,规格:2.5 mg) 5 mg/次,每 12 h 一次,每周连续 3 次,治疗 10 周。

1.3 疗效评价

采用 PASI 评分标准^[16]对两组患者治疗前后进行评分, $PASI \text{ 总分} = PASI(\text{头部得分}) + PASI(\text{上肢得分}) + PASI(\text{下肢得分}) + PASI(\text{躯干得分})$,每个部分均由皮损面积和严重程度指数构成,总得分越高病情越重。疗效指数 = $(\text{治疗前评分} - \text{治疗后评分}) / \text{治疗前评分} \times 100\%$ 。基本痊愈:目测皮疹基本消退且疗效指数大于等于 90%;显效:目测皮疹明显消退且疗效指数在 60%~89% 范围之内;好转:目测皮疹有所消退且疗效指数在 20%~59% 范围之内;无效:目测皮疹消退很少或皮疹无改变甚至病情加重且疗效指数小于 20%。有效率 = $(\text{基本痊愈例数} + \text{显效例数}) / \text{总例数} \times 100\%$ 。

1.4 血清中 TNF- α 、VEGF 和 bFGF 水平的测定

采集两组患者治疗前后的晨起空腹静脉血 5 mL 于离心管,采用低温高速离心机 (Centrifuge 5810 R, eppendorf) 3000 r/min 离心 10 min,将上层血清分离,后分装于两个 Aprotinin 管内,标号后贮存于 -20°C 冰箱待测。采用酶联免疫吸附法 (ELISA) 检测血清中 TNF- α 、VEGF 和 bFGF 水平。试剂盒购自北京北方生物制品研究所,严格按照试剂盒说明书进行操作。

1.5 不良反应监测

记录两组患者在治疗过程中出现的不良反应,必要时及时停药并进行特殊处理。

1.6 统计学方法

采用 SPSS 17.0 软件进行数据处理分析。TNF- α 、VEGF 和 bFGF 水平等计量资料以均值 $\pm$ 标准差 ($\bar{x} \pm s$) 表示,组内及组间比较采用 t 检验,治疗有效率和不良反应率等计数资料以率 (%) 表示,采用 χ^2 检验,检验标准设置为 $\alpha = 0.05$ 。

2 结果

2.1 疗效评价

实验组基本痊愈 6 例,显效 23 例,好转 8 例,无效 3 例,总有效率为 72.50%,对照组基本痊愈 4 例,显效 15 例,好转 15 例,无效 6 例,总有效率为 47.50%,实验组治疗总有效率明显高于对照组,差异具有统计学意义 ($P < 0.05$),详见表 1。

表 1 两组患者疗效对比[n(%)]

Table 1 Comparison of curative effect between two groups [n(%)]

Groups	n	Basic recovery	Effective	Improved	Invalid	Total effective rate
Control group	40	4 (10.00)	15 (37.50)	15 (37.50)	6 (15.00)	19 (47.50)
Experience group	40	6 (15.00)	23 (57.50)	8 (20.00)	3 (7.50)	29 (72.50)
χ^2	-					5.208
P	-					0.022

2.2 血清中 TNF- α 、VEGF 和 bFGF 水平的比较

两组治疗前血清 TNF- α 、VEGF 和 bFGF 水平比较无明显差异 ($P > 0.05$);治疗后,两组血清 TNF- α 、VEGF 和 bFGF 水平

较治疗前均下降,差异具有统计学意义 ($P < 0.05$);治疗后实验组血清 TNF- α 、VEGF 和 bFGF 水平均低于对照组,差异具有统计学意义 ($P < 0.05$)。详见表 2。

表 2 实验组与对照组治疗前后血清中 TNF- α 、VEGF 和 bFGF 水平比较($\bar{x} \pm s$)

Table 2 Comparison of levels of serum TNF- α , VEGF and bFGF between experimental group and control group before and after treatment($\bar{x} \pm s$)

Groups	n	Time	TNF- α (ng/L)	VEGF(ng/L)	bFGF(ng/L)
Control group	40	Before treatment	26.01 $\pm$ 5.98	235.67 $\pm$ 7.57	16.90 $\pm$ 4.21
		After treatment	18.58 $\pm$ 3.98*	186.52 $\pm$ 16.79*	14.76 $\pm$ 3.43*
Experience group	40	Before treatment	25.44 $\pm$ 6.22	240.12 $\pm$ 8.48	17.23 $\pm$ 4.43
		After treatment	13.87 $\pm$ 4.26* ^Δ	130.36 $\pm$ 14.75* ^Δ	10.16 $\pm$ 3.10* ^Δ

Notes: Compared with before treatment, *P<0.05; Compared with the control group, ^Δ P<0.05.

2.3 不良反应分析

共有 10 例患者出现腹胀、便秘、嗜睡、头晕、恶心、呕吐等不良反应,其中实验组 2 例(5.00%),对照组 8 例(20.00%),及时停药后上述不良反应均逐渐缓解。实验组不良反应发生率明显低于对照组,差异具有统计学意义($\chi^2=4.114, P=0.043$)。

3 讨论

目前我国约有 650 万名银屑病患者,其发病率为 0.47%^[17,18]。银屑病发病率在短短的 30 年间增长了 3 倍之多,已引起广泛的关注^[19]。银屑病的发生初期常见血管的非正常改变,其继发与复发与真皮乳头血管细胞的过表达有关。炎症反应也是银屑病的致病因素,T 细胞活化后,库普弗细胞(KC 细胞)增殖加速,发生炎症级联反应而加重银屑病^[20,21]。皮肤内黏附因子的过表达,可以促进淋巴细胞的浸润,增强其活化 T 细胞的能力,进而促进细胞角质的生成,加重银屑病患者的痛苦^[22,23]。由于银屑病的发病部位主要在皮肤,对于患者的外在形象影响较大,明显的皮肤破损会让人从视觉上感到不适,由此联想到此病或许具有传染性,进而孤立患者,对患者造成身体和精神的三重压力^[24]。目前临床上并没有针对此病的特效药,因此如何有效的治疗银屑病,缓解患者的精神压力,最终使患者恢复正常的工作生活,是临床医生较为关注的热点之一。

本文研究结果显示:与甲氨蝶呤相比,沙利度胺治疗临床有效率更高,不良反应发生率更低,表明使用沙利度胺治疗银屑病疗效较好,不良反应较少。沙利度胺是一种免疫调节药物,其作用机理可能通过抑制 I- κ B 磷酸化过程,从而降低炎症基因的表达,最终减少炎症介质如 TNF- α 的分泌^[25-27]。相关体外实验结果显示^[28],不同浓度的沙利度胺均可抑制细胞 VEGF 和 bFGF 分泌,降低细胞黏附胶原能力,减少毛细血管生成,且高浓度沙利度胺还能抑制细胞迁移,因此沙利度胺可直接抑制 VEGF 和 bFGF 的生成,降低细胞迁移和黏附能力来抑制新生血管的生成。

TNF- α 基因的异常表达,可以增强嗜中性粒细胞和单核细胞的吞噬功能,降低嗜中性粒细胞中超氧化物阴离子的释放最终减低机体免疫力,诱发炎症反应^[29,30]。VEGF 和 bFGF 在新生血管生成过程中有一定的协同作用,即 bFGF 可能是通过上调 VEGF 及其受体的表达而促进血管生成,VEGF 则是直接诱导新生血管的生成。本文对以上 3 指标进行研究发现,治疗后两组血清 TNF- α 、VEGF 和 bFGF 水平均下降;且实验组血清 TNF- α 、VEGF 和 bFGF 水平与对照组比较存在差异,与甲氨蝶呤相比降低幅度更大。说明沙利度胺可以抑制银屑病患者 TNF- α 基因的表达,从而抑制皮肤内黏附分子 T 细胞,抑制淋

巴细胞的浸润,降低 T 细胞活性,减少炎症反应;还可以抑制 VEGF 和 bFGF 的表达,直接或者间接抑制新生血管的生成。

综上所述,沙利度胺治疗银屑病具有较好疗效,且不良反应发生率较低,可以促进 TNF- α 、VEGF 和 bFGF 的生成,提高患者免疫力且抑制新生血管的生成。

参考文献(References)

- [1] 陈文娟,史玉玲.银屑病免疫学的研究进展[J].国际皮肤性病杂志, 2015, 41(1): 31-34
Chen Wen-juan, Shi Yu-ling. Advances in Immunology of Psoriasis [J]. International Journal of Dermatology and Venereology, 2015, 41 (1): 31-34
- [2] Perez-Chada LM, Singh S, Callis-Duffin K, et al. International Dermatology Outcome Measures (IDEOM) Group 2016 New York Meeting: Meeting Summary and Data from the Psoriasis Working Group [J]. J Drugs Dermatol, 2017, 16(8): 770-777
- [3] 张建中.银屑病的流行病学与危险因素[J].实用医院临床杂志, 2013, 10(1): 4-6
Zhang Jian-zhong. Epidemiology and Risk Factors of Psoriasis [J]. Journal of Practical Hospital Clinical, 2013, 10(1): 4-6
- [4] Walsh JA, McFadden M, Woodcock J, et al. Product of the Physician Global Assessment and body surface area: a simple static measure of psoriasis severity in a longitudinal cohort [J]. J Am Acad Dermatol, 2013, 69(6): 931-937
- [5] 梅沉成,李玲玲,张云璧,等.中医药对银屑病 T 细胞相关免疫学作用机制的研究进展[J].中华中医药杂志, 2016, 31(10): 4129-4132
Mei Chen-cheng, Li Ling-ling, Zhang Yun-bi, et al. Advances in the Study of Immunological Mechanism of Psoriasis Associated with T Cells by Chinese Medicine[J]. Chinese Journal of Traditional Chinese Medicine, 2016, 31(10): 4129-4132
- [6] 黄桂新.银屑病病因与发病机制的研究进展[J].中国医药指南, 2012, 10(13): 73-74
Huang Gui-xin. Progress in Etiology and Pathogenesis of Psoriasis[J]. Chinese Medicine Guide, 2012, 10(13): 73-74
- [7] Costa L, Lubrano E, Ramonda R, et al. Elderly psoriatic arthritis patients on TNF- α blockers: results of an Italian multicenter study on minimal disease activity and drug discontinuation rate [J]. Clin Rheumatol, 2017, 36(8): 1797-1802
- [8] 赵云夕,刘煊强,石林.中药联合心理干预对临床治愈银屑病患者血清中 IL-6、IL-8 及 TNF- α 水平的影响 [J]. 河北中医药学报, 2014, 29(4): 18-19
Zhao Yun-xi, Liu Huan-qiang, Shi Lin. Effect of Traditional Chinese Medicine Combined with Psychological Intervention on the Levels of Serum IL-6, IL-8 and TNF- α in Patients with Psoriasis [J]. Journal of

- Hebei Traditional Chinese Medicine and Pharmacology, 2014, 29(4): 18-19
- [9] 刘慧,刘雄彪,汪晓红,等.清热散结片联合阿维A胶囊治疗难治性银屑病疗效及对炎症反应的影响[J].现代生物医学进展, 2017, 17(11): 2134-2136, 2122
- Liu Hui, Liu Xiong-biao, Wang Xiao-hong, et al. Efficacy of Heat Fights Piece combine with Avi A Capsule in The Treatment of Intractable Psoriasis and Its Influence on The Inflammatory Response [J]. Progress in Modern Biomedicine, 2017, 17(11): 2134-2136, 2122
- [10] 郝江华,杜小平,郝宁.沙利度胺治疗中重度寻常型银屑病的疗效评价及对患者血清 VEGF 和 bFGF 的影响[J].中国麻风皮肤病杂志, 2016, 32(7): 413-415
- Hao Jiang-hua, Du Xiao-ping, Xi Ning. Efficacy of Thalidomide in the Treatment of Moderate and Severe Psoriasis Vulgaris and its Effects on Serum VEGF and bFGF [J]. China Journal of Leprosy and Skin Diseases, 2016, 32(7): 413-415
- [11] Haseena K, George S, Riyaz N, et al. Methotrexate iontophoresis versus coal tar ointment in palmoplantar psoriasis: A pilot study[J]. Indian J Dermatol Venereol Leprol, 2017, 83(5): 569-573
- [12] Kim BR, Ohn J, Choi CW, et al. Methotrexate in a Real-World Psoriasis Treatment: Is It Really a Dangerous Medication for All?[J]. Ann Dermatol, 2017, 29(3): 346-348
- [13] Mancano MA. Patient with terbinafine-induced subacute cutaneous lupus erythematosus followed by thalidomide-induced orofacial neuropathy; Beta blocker use, hypertension, and the risk of psoriasis; eczematous reaction to intravenous immunoglobulin; nicolau syndrome after intra-articular glucocorticoid injection; troponin leak associated with drug-induced methemoglobinemia [J]. Hosp Pharm, 2015, 50(1): 13-17
- [14] 谭美乐,卢海,潘延斌,等.沙利度胺治疗银屑病的疗效及对血清中 IL-2、TNF- α 的影响[J].广西医科大学学报, 2012, 29(1): 102-104
- Tan Mei-le, Lu Hai, Pan Yan-bin, et al. Efficacy of Thalidomide in the Treatment of Psoriasis and its Effects on the levels of serum IL-2 and TNF- α [J]. Journal of Guangxi Medical University, 2012, 29(1): 102-104
- [15] 刘晓明.我国新版银屑病诊疗指南解读[C].中华医学会第十八次全国皮肤性病学术年会论文集, 2012: 149-150
- Liu Xiao-ming. Interpretation of New Guidelines for Psoriasis Treatment in China[C]. Proceedings of the Eighteenth Annual Symposium on Dermatology and Venereal Diseases of Chinese Medical Association, 2012: 149-150
- [16] 蔡莎莉.银屑病 PASI 评分观察表的设计与应用[J].护理学杂志, 2013, 28(1): 78-78
- Cai Sha-li. Design and Application of Psoriasis PASI Score Observation Table[J]. Journal of Nursing, 2013, 28(1): 78-78
- [17] 王刚.银屑病免疫学研究新进展[J].中华皮肤科杂志, 2015, 48(4): 44-48
- Wang Gang. Recent Advances in Immunological Research of Psoriasis [J]. Chinese Journal of Surgery, 2015, 48(4): 44-48
- [18] 王丽新,段行武.银屑病中医体质研究述评[J].中医杂志, 2015, 56(23): 2060-2063
- Wang Li-xin, Duan Xing-wu. Review of Chinese Medicine Constitution in Psoriasis[J]. Journal of traditional Chinese Medicine, 2015, 56(23): 2060-2063
- [19] 胡素娟,黄友光,贺延敏,等.寻常性银屑病发病诱因分析[J].中国皮肤性病杂志, 2016, 30(12): 1275-1277
- Hu Su-juan, Huang You-guang, He Yan-min, et al. Analysis of Predisposing Factors of Psoriasis Vulgaris [J]. The Chinese Journal of Dermatovenereology, 2016, 30(12): 1275-1277
- [20] Indhumathi S, Rajappa M, Chandrashekar L, et al. T helper-2 cytokine/regulatory T-cell gene polymorphisms and their relation with risk of psoriasis in a South Indian Tamil cohort [J]. Hum Immunol, 2017, 78(2): 209-215
- [21] 韩建文,肖瑞,乌日娜.寻常型银屑病患者血清中 TNF- α 、IL-8 水平分析[J].内蒙古医科大学学报, 2016, 33(1): 14-16, 20
- Han Jian-wen, Xiao Rui, Wu Ri-na. Analysis of the Levels of Serum TNF- and IL-8 in Patients with Psoriasis Vulgaris[J]. Journal of Inner Mongolia Medical University, 2016, 33(1): 14-16, 20
- [22] Dou R, Liu Z, Yuan X, et al. PAMs ameliorates the imiquimod-induced psoriasis-like skin disease in mice by inhibition of translocation of NF- κ B and production of inflammatory cytokines [J]. PLoS One, 2017, 12(5): e0176823
- [23] Hu XP, Xie Q, Chen CF, et al. Let-7a Inhibits T-Cell Proliferation and IFN- γ Secretion by Down-Regulating STAT3 Expression in Patients with Psoriasis[J]. Cell Physiol Biochem, 2017, 42(1): 115-125
- [24] Chawla N, Kataria SP, Aggarwal K, et al. Significance of vascular endothelial growth factor and CD31 and morphometric analysis of microvessel density by CD31 receptor expression as an adjuvant tool in diagnosis of psoriatic lesions of skin [J]. Indian J Pathol Microbiol, 2017, 60(2): 189-195
- [25] 梁惠球,周桂兰,苏仙玲.沙利度胺治疗银屑病的护理体会[J].大家健康(学术版), 2012, 6(19): 65-66
- Liang Hui-qiu, Zhou Gui-lan, Su Xian-ling. Nursing Experience of Thalidomide in the Treatment of Psoriasis[J]. Everybody Health(Academic Edition), 2012, 6(19): 65-66
- [26] Bianchi L, Del Duca E, Romanelli M, et al. Pharmacodynamic assessment of apremilast for the treatment of moderate-to-severe plaque psoriasis[J]. Expert Opin Drug Metab Toxicol, 2016, 12(9): 1121-1128
- [27] 桂瑞,宋永平.沙利度胺的临床应用新进展[J].医学综述, 2012, 18(11): 1739-1742
- Gui Rui, Song Yong-ping. Recent Advances in Clinical Application of Thalidomide[J]. Medical review, 2012, 18(11): 1739-1742
- [28] Tan H, Chen H, Xu C, et al. Role of vascular endothelial growth factor in angiodyplasia: an interventional study with thalidomide [J]. J Gastroenterol Hepatol, 2012, 27(6): 1094-1101
- [29] Li W, Wu X, Xu X, et al. Coenzyme Q10 Suppresses TNF- α -Induced Inflammatory Reaction In Vitro and Attenuates Severity of Dermatitis in Mice[J]. Inflammation, 2016, 39(1): 281-289
- [30] Oter-López B, Llamas-Velasco M, Sánchez-Pérez J, et al. Induction of Autoantibodies and Autoimmune Diseases in Patients with Psoriasis Receiving Tumor Necrosis Factor Inhibitors[J]. Actas Dermosifiliogr, 2017, 108(5): 445-456