OJNeph > Vol.2 No.4, December 2012

OPEN ACCESS

The Clinical Efficacy of Low-Dose Tacrolimus Combined with Tripterygium to Treat the Steroid-Resistant Nephrotic Syndrome

PDF (Size:232KB) PP. 97-104 DOI: 10.4236/ojneph.2012.24016

Author(s)

Hongqi Ren, Guofang Chen, Xuan Zhou, Yan Li, Qing Cai, Shujing Han, Rui Wang

ABSTRACT

Objective: To observe the clinical efficacy and safety of low dose tacrolimus (TAC) combined with tripterygium (TW) in treatment of steroid resistant nephritic syndrome (SRNS). Method: The patients, who were diagnosed with mesangial proliferative glomerulonephritis (MesPGN) and focal segmental glomerulosclerosis (FSGS) by biopsy and failed to respond to a 3-month treatment with prednisone (1 mg/kg · d), were randomly divided into 2 groups (TAC + TW Group and TW Group). Initially TAC + TW group took TAC 0.05mg/(kg · d) 2 h after meal at 12 h interval. The plasma TAC level was examined after 3 days and was kept at 1.5 - 4 ng · ml; meanwhile, TW was given at 60 mg/d before meal. TW group only took TW (60 mg/d). The efficacy, adverse reactions and plasma TAC levels were observed in each group. Results: 1) Totally 20 SRNS patients completed the trial, 11 of TAC + TW Group and 9 of TW Group. There is no statistical difference between the two groups in terms of age, gender, duration since onset of the disease, blood pressure, 24 h UPQ, serum albumin, creatinine, cholesterol, triglyceride, FBG, kidney pathological categories, time of taking prednisone etc.; 2) Urine protein started to decrease after 1 month treatment in both of TAC + TW and TW groups. By the 12th month of treatment, TAC + TW group showed 8 cases of complete remission (72.7%), 2 cases of partial remission (18.2%) and 1 case of no improvement (9.1%), while those of TW groups were 2 (22.2%), 4 (44.5%) and 3 (33.3%), respectively; 3) With treatment, the TAC + TW Group patients' plasma protein was significantly higher than that of pretreatment stage and recovered to normal level after 6 month of treatment. However, there was no significant plasma protein increase in TW Group. No obvious changes were observed on serum creatinine level of patients of both the two groups; 4) The incidence of adverse reactions was not significantly different between the two groups. Conclusion: TAC + TW reduced proteinuria of SRNS patients, increased clinical remission rate and was tolerant to SRNS patients. We conclude that TAC + TW treatment is an effective way to treat patients with SRNS.

KEYWORDS

Steroid-Resistant Nephrotic Syndrome; Tacrolimus; Tripterygium; Treatment Outcome

Cite this paper

H. Ren, G. Chen, X. Zhou, Y. Li, Q. Cai, S. Han and R. Wang, "The Clinical Efficacy of Low-Dose Tacrolimus Combined with Tripterygium to Treat the Steroid-Resistant Nephrotic Syndrome," *Open Journal of Nephrology*, Vol. 2 No. 4, 2012, pp. 97-104. doi: 10.4236/ojneph.2012.24016.

References

[1] M. van Husen and M. J. Kemper, "New Therapies in Steroid-Sensitive and Steroid-Resistant Idiopathic Nephrotic Syndrome," Pediatric Nephrology, Vol. 26, No. 6, 2011, pp. 881-892. doi:10.1007/s00467-010-1717-5

[2] X. F. Sun and X. M. Chen, "Clinical Application of Tacrolimus in Primary Nephrotic Syndrome," Chinese Journal of Practical Internal Medicine, Vol. 28, No. 5, 2008, pp. 323-325.

[3] H. M. Li and X. D. Shi, "Treatment of Steroid-Resistant Nephrotic Syndrome with Tacrolimus," The Journal of Practical Medicine, Vol. 25, No. 22, 2009, pp. 3871-3873.

[4] Q, Chen, Z. H. Liu, W. X. Hu, et al., "A Prospective Preliminary Study of Tacrolimus (FK506) Combined

OJNeph Subscription
Most popular papers in OJNeph
About OJNeph News
Frequently Asked Questions
Recommend to Peers
Recommend to Library
Contact Us

with Low-Dose Prednisone in Patients with Membranous Lupus Nephropathy," Chinese Journal of Nephrology, Dialysis & Transplantation, Vol. 13, No. 2, 2004, pp. 101-106.

[5] J. McCauley, R. Shapiro, V. Scantlebury, et al., "FK 506 in the Management of Transplant-Related Nephrotic Syndrome and Steroid-Resistant Nephrotic Syndrome," Transplantation Proceedings, Vol. 23, No. 6, 1991, pp. 3354-3356.

[6] S. Choudhry, A. Bagga, P. Hari, et al., "Efficacy and Safety of Tacrolimus versus Cyclosporine in Children with Steroid-Resistant Nephrotic Syndrome: A Randomized Controlled Trial," American Journal of Kidney Diseases, Vol. 53, No. 5, 2009, pp. 760-769. doi:10.1053/j.ajkd.2008.11.033

[7] X. Li, H. Li, H. Ye, et al., "Tacrolimus Therapy in Adults with Steroidand Cyclophosphamide-Resistant Nephrotic Syndrome and Normal or Mildly Reduced GFR," American Journal of Kidney Diseases, Vol. 54, No. 1, 2009, pp. 51-58. doi:10.1053/j.ajkd.2009.02.018

[8] Z. H. Chen, W. S. Qin, C. H. Zeng, et al., "Triptolide Reduces Proteinuria in Experimental Membranous Nephropathy and Protects against C5b-9-Induced Podocyte Injury in Vitro," Kidney International, Vol. 77, No. 11, 2010, pp. 974-988. doi:10.1038/ki.2010.41

[9] Z. H. Liu, S. J. Li, Y. Wu, et al., "Treatment of Membranous Nephropathy with Tripterygium Combined LowDose Hormone: A Prospective Randomized Control Trial," Chinese Journal of Nephrology, Dialysis & Transplantation, Vol. 18, No. 4, 2009, pp. 303-309.

[10] I. Roberti and S. Vyas, "Long-Term Outcome of Children with Steroid-Resistant Nephrotic Syndrome Treated with Tacrolimus," Pediatric Nephrology, Vol. 25, No. 6, 2010, pp. 1117-1124. doi:10.1007/s00467-010-1471-8

[11] S. Gulati, N. Prasad, R. K. Sharma, et al., "Tacrolimus: A New Therapy for Steroid-Resistant Nephrotic Syndrome in Children," Nephrology Dialysis Transplantation, Vol. 23, No. 3, 2008, pp. 910-913. doi:10.1093/ndt/gfm688

[12] Ge Y. C. H. L. Xie, S. J. Li, et al., "Effect of Tripterygium in Patients with Diabetic Nephropathy: A Prospective Randomized Control Clinical Trial," Chinese Journal of Nephrology, Dialysis & Transplantation, Vol. 19, No. 6, 2010, pp. 501-507.

[13] M. Chen, H. Li, X. Y. Li, et al., "Tacrolimus Combined with Corticosteroids in Treatment of Nephrotic Idiopathic Membranous Nephropathy: A Multicenter Randomized Controlled Trial," American Journal of the Medical Sciences, Vol. 339, No. 3, 2010, pp. 233-238. doi:10.1097/MAJ.0b013e3181ca3a7d

[14] T. Aizawa-Yashiro, K. Tsuruga, S. Watanabe, et al., "Novel Multidrug Therapy for Children with Cyclosporine-Resistant or -Intolerant Nephrotic Syndrome," Pediatric Nephrology, Vol. 26, No. 8, 2011, pp. 1255-1261. doi:10.1007/s00467-011-1876-z

[15] S. Tang, A. W. Tang, M. K. Tam, et al., "Use of Tacrolimus in Steroidand Cyclophosphamide-Resistant Minimal Change Nephrotic Syndrome," American Journal of Kidney Diseases, Vol. 42, No. 5, 2003, pp. E13-E15. doi:10.1016/j.ajkd.2003.07.011

[16] L. Butani and R. Ramsamooj, "Experience with Tacrolimus in Children with Steroid-Resistant Nephrotic Syndrome," Pediatric Nephrology, Vol. 24, No. 8, 2009, pp. 1517-1523. doi:10.1007/s00467-009-1220-z

[17] G. F. Yuan and S. G. Yuan, "Clinical Observation on Treatment of Refractory Nephrotic Syndrome with Tripterygium Combined Prednisone," Chinese Journal of Integrated Traditional and Western Nephrology, Vol. 10, No. 3, 2009, pp. 246-247.

[18] L. N. Miao, J. Sun, H. Yuan, et al., "Clinical Study of Low Dosage FK506 in the Treatment of Mesangial Proliferative Glomerulonephritis," Chinese Journal of Nephrology, Vol. 21, No. 10, 2005, pp. 624-625.

[19] T. H. Westhoff and M. van der Giet, "Tacrolimus in the Treatment of Idiopathic Nephrotic Syndrome," Expert Opinion on Investigational Drugs, Vol. 16, No. 7, 2007, pp. 1099-1110. doi:10.1517/13543784.16.7.1099

[20] M. Del Rio and F. Kaskel, "Evaluation and Management of Steroid-Unresponsive Nephrotic Syndrome," Current Opinion in Pediatrics, Vol. 20, No. 2, 2008, pp. 151-156. doi:10.1097/MOP.0b013e3282f4e6e4

[21] M. D. Sinha, R. MacLeod, E. Rigby, et al., "Treatment of Severe Steroid-Dependent Nephrotic Syndrome (SDNS) in Children with Tacrolimus," Nephrology Dialysis Transplantation, Vol. 21, No. 7, 2006, pp. 1848-1854. doi:10.1093/ndt/gfi274

[22] S. Manrique-Rodríguez, C. M. Fernandez-Llamazares and M. Sanjurjo-Saez, "Pharmacotherapeutic Review and Update of Idiopathic Nephrotic Syndrome in Children," Pharmacy World & Science, Vol. 32, No. 3, 2010, pp. 314-321. doi:10.1007/s11096-010-9380-2