

The Clinical Observation of Boluoke with Lotensin, a New Therapy for Early Stage Diabetic Nephropathy

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[Abstract] Goal: to examine the clinical effect of Boluoke with Luton on early stage of diabetic nephropathy. **Method:** 93 cases of diabetic neuropathy were randomly divided into Treatment group (53 cases) and Control group (40 cases). The treatment group were given oral lumrokinase enteric-coated capsules (Boluoke) and benazepril hydrochloride tablets (Lotensin), while the control group were given Huabahuagen Tablets (Colquhounia root tablets) and dipyridamole tablets, and their therapeutic effects were compared. **Result:** the efficacy showed in the treatment group is significantly higher compared to the control group. **Conclusion:** The new therapeutic agent Boluoke with Lotensin significantly decreased micro-proteinuria and slowed the deterioration of renal function.

[Key Word] Diabetic nephropathy; Boluoke; Lotensin

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Diabetic nephropathy should be treated as early as possible in order to prevent deterioration of renal function. In this experiment, a new therapeutic regimen, Boluoke with Lotensin, were used for early stage diabetic nephropathy. Clinical observation showed a decrease in micro-proteinuria and onset of clinical proteinuria was delayed.

1. Data and Methods

1.1 Clinical Data: All 93 cases were obtained from inpatients and outpatients of Department of Nephrology and were randomly divided into the treatment group and the control group. Of the 53 cases in treatment group, male to female ratio was 43:10 and average age was 58.3 years old. Of the 40 cases in the control group, male to female ratio was 18:22 and average age was 57.9 years old.

1.2 Diagnostic Criteria: all cases in this experiment conformed to the standard diagnostic criteria of diabetic nephrology issued by Nephrology Committee of Chinese Medical Association (中華醫學會腎臟病委員會) in 1996: (1) More than 6 years of history of diabetes (2) Micro-proteinuria more than 19mg/L (3) Elevated basal blood pressure (4) Normal renal function with negative clinical proteinuria.

1.3 Treatment Method: The treatment group were given 2 enteric-coated capsules of lumrokinase (Boluoke) three times daily and 1 tablet of benazepril hydrochloride

(Lotensin) twice daily. The control group received 5 tablets of Huobahuagen (Colquhounia root tablet) three times daily and 2 tablets of dipyridamole three times daily. The treatment duration for both groups was 1 month.

1.4 Standards for Efficacy Evaluation and Statistical Method: the standards for efficacy evaluation used in this experiment conformed to the standards issued by Nephrology Committee of Chinese Medical Association [1]. The results were categorized into ineffective, effective, and markedly effective; t test and χ^2 test were used for statistical analyses. (1) Ineffective: no change in level of micro-proteinuria before and after treatment, and/or even increased micro-proteinuria and elevated blood pressure; (2) Effective: improvement in micro-proteinuria, blood pressure stable, and improvement in clinical symptoms (diminished edema); (3) Markedly effective: micro-proteinuria markedly decreased.

2. Results

According to the changes in micro-proteinuria after treatment, there were 3 ineffective cases, 28 effective cases, and 22 markedly effective cases in the treatment group, with a total efficacy rate of 94.3%. On the other hand, there were 14 ineffective cases and 26 effective cases in the control group, with a total efficacy rate of 65%. The results of the treatment group were significantly better than those of the control group. Please refer to Table 1.

Table 1. Comparison of Changes in Micro-Proteinuria and Serum Potassium Before and After Treatment

	n	Micro-Proteinuria		Serum Potassium	
		Before	After	Before	After
Treatment Group	53	52.31±6.03	10.16±3.28*	4.23±1.16	4.14±1.21
Control Group	40	51.64±5.14	38.29±10.16*	4.08±1.23	4.22±1.17

Note: the difference in the pre- and post-treatment improvement between the treatment group and the control group was statistically significant. *P<0.05

3. Discussion

As the global prevalence of diabetes climbs so do the complications and disabilities associated with diabetes. Diabetic nephropathy has become the leading etiology of end stage renal diseases [2]. There are numerous allopathic and traditional Chinese medical therapies for diabetic nephropathy at present, but the efficacies vary widely. It is imperative that researchers continue to seek out more effective treatments. This research used Boluoque with Lotensin to halt the progression in early stage diabetic nephropathy

and the result were remarkable with decrease in micro-proteinuria and delay in the onset of clinical proteinuria, thus preventing deterioration of renal function. Boluoke is a proteolytic enzyme preparation derived from cultured earthworms (*Eisenia foetida*). It contains fibrinolytic enzymes and plasminogen activators, and has marked anti-coagulant effects. Lotensin is an angiotensin converting enzyme inhibitor that has vasodilation effect on afferent and efferent glomerular arterioles. It can decrease glomerular hypertension, hyperperfusion and hyperfiltration, suppress glomerular extracellular matrix formation, protect remnant nephrons, and prevent fibrosis of glomeruli [3]. Using Boluoke and Lotensin together can effectively improve micro-circulation of kidneys and decrease micro-proteinuria and prevent deterioration of renal function.

Reference

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