Clinical effect study on patients with coronary heart disease complicated with atrial fibrillation after PCI operation.

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Abstract

Objective: The study was on the clinical effect of patients with coronary heart disease complicated with atrial fibrillation after PCI operation.

Methods: 60 cases of patients with coronary heart disease complicated with atrial fibrillation treated in our hospital from March 2015 to March 2016 were chosen, who were divided into treatment group and control group with 30 cases each according to different therapeutic method. The treatment of control group was Hua Falin, and treatment group received aspirin, clopidogrel and Hua Falin for treatment. The clinical effect, incidence and recurrence rate of adverse bleeding events of the two groups were compared.

Results: The treatment effect of treatment group was better than the control group, and there was significant difference between two groups (χ^2=4.32, P<0.05), which had statistical significance. The incidence of adverse bleeding events of the treatment group was lower than that of the control group, and there was significant difference between two groups (χ^2=4.043, P<0.05). The rate of control group with recurrence was higher than the treatment group, and there was significant difference between two groups (χ^2=4.043, P<0.05).

Conclusion: Treating the patients with coronary heart disease complicated with atrial fibrillation by aspirin and clopidogrel after PCI can improve the cure rate and reduce the incidence and recurrence rate of adverse bleeding events. It provides more forceful basis for clinical treatment and has great significance on the treatment of patients with heart disease complicated with atrial fibrillation.

Background

Coronary heart disease is also called coronary atherosclerosis, which refers to body lipid metabolism disorder, and lipid accumulation on the arterial intima forms white plaque, causing narrow arterial lumen, poor blood flow, cardiac ischemia and even angina pectoris and so on [1]. The treatment of coronary heart disease is a worldwide problem, which has high mortality and morbidity [2]. It is an important reason for the sudden death that coronary heart disease causes ventricular arrhythmias [3]. Despite drug and PCI treatment has made great progress, there are still many problems existing [4]. Myocardial ischemia-reperfusion injury caused by PCI operation is another important reason for aggravated myocardial injury [5].

The mechanism of ischemia-reperfusion injury includes inflammation, oxidative stress [6], and calcium overload. In spite of the use of stent significant improving the prognosis of coronary heart disease, restenosis rate after PCI is still 5% [7]. Another name of Fangchan is atrial fibrillation, the main cause of which is arrhythmia leading to atrial rhythm disorder and complication [8]. Patients with atrial fibrillation has atrial dysfunction and tendency of thrombosis formation occurs [9]. When complicated with coronary heart disease (CHD), atrial fibrillation is prone to cause related complications [10]. 60 cases of patients with coronary heart disease complicated with atrial fibrillation treated in our hospital from March 2015 to March 2016 were chosen to receive control analysis, the study content of which was reported as follows.

Materials and Methods

General data

60 cases of patients with coronary heart disease complicated with atrial fibrillation treated in our hospital from March 2015 to March 2016 were chosen, who were divided into treatment group and control group with 30 cases each according to different therapeutic method. Patients of 60 cases with allergic history were exclusion. The control group included 20 men and 10 women with the age range from 52 to 68 years old and an average of (56.2 ± 48.1) as well as course of disease 1.2~3.8 years and an average of (1.6 ± 4.2). The treatment group had 30 cases, among which male was 16 cases and female 14 cases, aged 53 to 66 years old with an average of (56.2 ± 45.8 years) and the course of disease (1.6~3.9) years, average1.8 ± 4.1). The difference of the two groups in age, sex and course of disease was not significant (P>0.05), which has comparability.

Treatment methods

First of all, the two groups received coronary artery angiography, and then the PCI treatment [11,12]. Control group received Warfarin treatment, with oral method, starting dose 0.5-20 mg once and 2.5-7.5 mg per day. Adult dosage is 10 mg, QD for successive3 days (a course) [13,14]. The treatment group were treated with aspirin, clopidogrel and warfarin with the dosage of oral aspirin, 50~150 mg once, once a day, oralclopidogrel 75 mg/D before meals, once per 2~3 days and the same dosage of warfarin with those of the control group [15,16]. Medication was used in both preoperative and postoperative periods.

Observation indexes

Comparing the treatment effect, incidence and recurrence rate of adverse bleeding events of the two groups, the efficacy was divided into recovery referring to no clinical symptoms and each indexnormal; effectivity meant a fundamental turn for the better with no significant clinical symptoms; Invalid effect showed no improvement and even heavier situation. Adverse bleeding events was composed bycerebral hemorrhage, hemorrhage of digestive tract, skin and mucous membrane haemorrhage [17,18].

Table 1. *The treatment effect of the two groups [n (%)].*

Groups	Treatment group	Control group
Cases	30	30
Cure	24 (80.00)	16 (53.33)
Effectivity	4 (13.33)	6 (20.00)
Invalidation	2 (0.60)	8 (26.70)
Total effective rate	28 (93.33)	22 (73.40)

Statistical methods

Applying SPSS11.0 software for data analysis and processing of the two groups, P<0.05 meant that there were statistically significant differences between the results of data. Therapeutic effect, incidence and recurrence rate of adverse bleeding events in result indexes were measurement data which were tested by χ^2 [19,20].

Results

Comparing the treatment effect of the two groups

In the control group, 16 cases were cured in which 6 cases were effective, 8 ineffective and the cure rate was 53.33%, the total effective rate was 73.4%. The treatment group had 24 cured cases, of which 4 cases were effective, 2 ineffective and the cure rate was 80%, the total effective rate was 93.33%, which was as shown in Table 1. The treatment effect of treatment group was better than the control group, and there was significant difference between two groups (χ^2=4.32, P<0.05), which had statistical significance.

Comparing the incidence of adverse bleeding events between the two groups

The incidence of adverse bleeding events of the treatment group was lower than that of the control group, and there was significant difference between two groups (χ^2=4.043, P<0.05), which had statistical significance as shown in Table 2.

Table 2. *Comparasion of the incidence of adverse bleeding events between the two groups.*

Groups	Treatment group (n=30)	Control group (n=30)
Cerebra hemorrhage	0	2
Digestive tract hemorrhage	0	2
Skin and mucous membrane hemorrhage	1	2
Incidence of adverse bleeding events (%)	3.34	20

Comparing the recurrence rate between the two groups

Recurrence of the control group accounted for 20% and the treatment group 3.34%. The rate of control group with recurrence was higher than the treatment group, and there was significant difference between two groups (χ^2=4.043, P<0.05), which had statistical significance as shown in Table 3.

Table 3. *Comparasion of the recurrence rate between the two groups.*

Groups	Cases	Recurrence (n)	Percent (%)

Treatment group	30	1	3.3
Control group	30	6	20

Discussion

In recent years, with the developing level of economic development and people's life, the incidence rate of coronary heart disease is higher and higher [21]. At present, coronary heart disease is located at the first place in developed countries. In addition, incidence and mortality of China's population with coronary heart disease is increasing year by year, and the disease groups have become younger and younger. At the same time, the gap between urban population and rural population is getting smaller and smaller [22]. The reason why the incidence is higher includes many ones, such as patients with high blood pressure, high cholesterol, diabetes and obesity, etc.; unhealthy lifestyle, long-term smoking, drinking, lack of exercise, etc.; long time depression or anxiety; family genetic history.

Warfarin is a kind of coumarin anticoagulants against the role of vitamin K, which can well inhibit synthesis of vitamin K in liver and coagulation factors such as II, VII, IX, X instead of any resistance to the factors. It works by consumption of the coagulation factor with activity in body, and the efficacy lasts long time, which can effectively prevent the formation and development of thrombosis, prevention and treatment of thromboembolic disease, reduce the incidence and mortality rate of pulmonary embolism to the maximum extent, reduce the degree of high risk of surgery in surgical department, better treat rheumatic heart disease, hip fixation, artificial heart valve replacement surgery disease [23-25]. Warfarin can assist the treatment of myocardial with the infarction. If it participates in aspirin and clopidogrel combined therapy, the therapeutic effect can be improved [26,27] to achieve the maximum utilization of drugs.

In this study, the cure rate of the treatment group was 80% and total effectivity 93.33%. Comparing the two groups, the difference was statistically significant (P<0.05); the incidence of adverse bleeding events was 3.34%. And compared with the control group, the difference was statistically significant (P<0.05); recurrence rate was 3.34%, which had statistically significant differences from the control group (P<0.05).

In summary, if patients with coronary heart disease complicated with atrial fibrillation take aspirin and clopidogrel after PCI as treatment, it can improve their cure rate, reduce the incidence and recurrence rate of the adverse bleeding events, provide more effective basis for clinical treatment as well as have great significance on treatment for patients with coronary heart disease complicated with atrial fibrillation. Therefore, it should be widely applied in clinic.

Reference

1. Sexton M, Bross DJ, Hebel R, Schumann BC, Gerace TA, Lasser N, Wright N. Risk-factor changes in wives with husbands at high risk of coronary heart disease (CHD): The spin-off effect. J Behav Med 2014;103: 112-113.

2. Roberts-Thomson KC, Lau DH, Sanders P. The diagnosis and management of ventricular arrhythmias. Nat Rev Cardiol 2011; 8: 311-321.

3. Zipes DP, Wellens HJ. Sudden cardiac death. Circulation 1998; 98: 2334-2351.

4. Zhu KF, Wang YM, Zhu JZ, Zhou QY, Wang NF. National prevalence of coronary heart disease and its relationship with human development index: A systematic review. Eur J Prev Cardiol 2016; 23: 530-543.

5. Murphy E, Steenbergen C. Mechanisms underlying acute protection from cardiac ischemia-reperfusion injury. Physiol Rev 2008; 88: 581-609.

6. Zhang Y, Wang XL, Zhao J, Wang YJ, Lau WB, Yuan YX, Gao EH, Koch WJ, Ma XL. Adiponectin inhibits oxidative/ nitrative stress during myocardial ischemia and reperfusion via PKA signaling. Am J Physiol Endocrinol Metab 2013; 305: E1436-E1443.

7. Bulum J, Ernst A, Strozzi M. The impact of successful manual thrombus aspiration on in-stent restenosis after primary PCI: angiographic and clinical follow-up. Coron Artery Dis 2012; 23: 487-491.

8. Xiaoshe C, Dengpeng H, Shaojun W. Clinical observation of aspirin combined with clopidogrel in the treatment of patients with coronary heart disease and atrial fibrillation after PCI operation. Chinese Med Innovat 2010; 4: 49-50.

9. Fatima S, Holbrook A, Schulman S, Park S, Troyan S, Curnew G. Development and validation of a decision aid for choosing among antithrombotic agents for atrial fibrillation. Thromb Res 2016; 145: 143-148.

10. Hsu JC, Maddox TM, Kennedy K, Katz DF, Marzec LN, Lubitz SA, Gehi AK, Turakhia MP, Marcus GM. Aspirin Instead of Oral Anticoagulant Prescription in Atrial Fibrillation Patients at Risk for Stroke. J Am CollCardiol 2016; 67: 2913-2923.

11. Qiutang Z, Yudong Y. Point of view and focus of clinical cardiovascular disease in patients with coronary heart disease and atrial fibrillation at present. J Clin Cardiovasculr Dis 2015; 4: 370-373.

12. Govindaraju M, Mital A. Myocardial oxygen increasesdue to physical training in individuals with coronary heartdisease (CHD): Rate pressure product (RPP) measurements. J Occupation Rehab 2012; 73: 23-24.

13. Ling L, Wenling Z, Ye B. The investigation for the treatment and follow-up of patients with coronary heart disease and atrial fibrillation in coronary artery interventional therapy after antithrombotic. Chinese Circul J 2007; 3: 166-168.

14. Huliang Q, Jun H, Huan L. Study on the current situation of anti-thrombotic therapy in elderly patients with acute coronary syndrome complicated with atrial fibrillation after percutaneous coronary intervention. J Practical Med 2014; 1: 99-101.

15. Junlu Y, Tiesuo D, Gong C. The clinical observation of Coronary heart disease and atrial fibrillation after PCI anticoagulation. Shaanxi Med J 2014; 8: 969-970.

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16. Leite L, Matos V, Gonçalves L, Marques JS, Jorge E, Calisto J, Antunes M, Pego M. Heart transplant coronary artery disease: Multimodality approach in percutaneous intervention. Revista Portuguesa de Cardiologia 2015; 3: 12-13.

17. Lin H, Wanyu F. Pharmaceutical Care of anticoagulation therapy for patients with coronary heart disease and atrial fibrillation after PCI. The Pharmaceutical Management of China Hospital Association 2013; 12: 5.

18. Li X, Peng G. Study on the anti-thrombotic strategy of patients with coronary heart disease and atrial fibrillation after PCI operation. J Med Forum 2015; 9: 91-92.

19. Leite L, Matos V, Gonçalves L, Marques JS, Jorge E, Calisto J, Antunes M, Pego M. Heart transplant coronary artery disease: Multimodality approach in percutaneous intervention. Revista Portuguesa de Cardiologia (English Edition) 2016; 10: 356.

20. Xun Y. Study on antithrombotic strategy selection in special type of patients with coronary heart disease after PCI. Peking Union Medical College 2015; 12: 45-46.

21. Da WJ. Study on safety of surgery limited operation in patients with coronary heart disease (CHD) and tumor after interventional therapy. The Chinese People Liberation Army Medical College 2015; 13: 78-79.

22. Xiaoshe C, Dengpeng H, Shaojun W. Experience in antithrombotic therapy on patients with coronary heart disease and atrial fibrillation after PCI. Int J Pharmaceut Med 2009; 24: 49-52.

23. Jinping L. Study of psychological intervention on patients with coronary heart disease complicated with anxiety after interventional therapy. Xinxiang Medical University 2014; 5: 23-24.

24. Yifeng C, Li BF, Xiaohong H. Pharmacy service for elderlypatients with coronary heart disease (CHD) with atrial fibrillation (AF) after percutaneous coronary intervention with postoperative hemorrhage. Pharmaceut Care Res 2015; 3: 185-188.

25. Xun Y, Wenyao W, Kuo Z. The therapy strategy of postoperative antiplatelet and anticoagulation in patients with coronary heart disease and atrial fibrillation after percutaneous coronary intervention. Chinese Circul J 2015; 8: 723-727.

26. Shimizu R, Tori H, Yasuda D, Hiraoka Y, Furukawa Y, Yoshimoto A, Iwakura T, Matsuoka N, Tomii K, Kohara N, Hashida T, Kume N. Comparison of serum lipid management between elderly and non-elderly patients with and without coronary heart disease (CHD). Preventive Med Reports 2016; 12: 12-13.

27. Dengwei K. Study onantithrombotic treatment of patients with coronary heart and atrial fibrillation disease. Gansu Med 2015; 2: 115-118.

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