Isfahan University of Medical Sciences
School of Medicine

Thesis for Attaining Specialty in Internal Medicine

Title:

Effect of 3-day Treatment with Midodrine versus Octreotide on Renin Plasma Activity in Cirrhotic Patients with Ascites

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December 2009

Abstract

Introduction: In cirrhotic patients peripheral vasodilatation may decrease renal blood flow and subsequently raises plasma renin activity. Octreotide with several mechanisms causes peripheral arterial vasoconstriction. Midodrine is an alpha agonist and acts as a peripheral vasoconstrictor; therefore it may reduce plasma renin activity. We compared these two agents among cirrhotic patients to determine their ability of reducing plasma renin activity.

Methods: As a clinical trial performed in Al-Zahra hospital in 2008-2009, 34 patients with CHILD C cirrhosis were involved in this study. They were randomized into two groups. First group was treated by 3 days of subcutaneous octreotide 50 μg BD (n=17). For second group oral midodrine 7.5 mg TDS was administrated for 3 days. Plasma renin activity, blood pressure, glomerular filtration rate, and body weight were measured and compared before and after therapy in both groups.

Results: In both groups, plasma rennin activity decreased significantly after treatment. The difference in decreasing plasma rennin activity was statistically significant between these two groups. Our study showed that both midodrine and octreotide can reduce plasma renin activity but midodrine can reduce PRA more potently than octreotide. GFR showed no significant increase in both groups.

Conclusion: Midodrine has a favorable hemodynamic effect in cirrhotic patients by decreasing plasma rennin activity.

Key words: cirrhosis, plasma renin activity, midodrine, octreotide

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6.1 REFERENCES

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بررسي تاثير سه روز درمان با ميدودرين بر روي فعاليت رنين پلاسمايي در بيماران سيروز كبدي دچار آسيت در مقايسه با بيماران تحت درمان با اكترئوتايد

مقدمه: در بیماران سیروزی اتساع عروق محیطی ممکن است منجر به کاهش جریان خون کلیه و در نتیجه افزایش فعالیت رنین پلاسمایی گردد. اکترئوتید با چندین مکانیسم منجر به انقباض شریان های محیطی می شود. میدودرین آلفا آگونیستی است که به عنوان یک وازوکانستریکتور محیطی عمل می کند، لذا ممکن است منجر به کاهش فعالیت رنین پلاسمایی گردد. هدف از این مطالعه مقایسه این دو دارو در بیماران سیروزی دارای آسیت به منظور تأثیر آنها بر روی کاهش فعالیت رنین پلاسمایی بود.

روش ها: این مطالعه یک کارآزمایی بالینی است که در بیمارستان الزهرا (س) در سالهای 88-87 انجام شد. 34 بیمار سیروزی CHILD C وارد این مطالعه شدند. آنها به طور تصادفی به دو گروه تقسیم شدند. گروه اول با 7/5 میلی گرم میدودرین خوراکی سه بار در روز برای 3 روز درمان شدند (n=17). برای گروه دوم 50 میکروگرم اکترئوتید زیرجلدی روزی دو بار به مدت 3 روز تجویز گردید. فعالیت رنین پلاسمایی، فشار خون، میزان فیلتراسیون گلومرولی و وزن قبل و بعد از درمان در هر دو گروه مورد اندازه گیری و مقایسه قرار گرفت. تمامی داده ها با استفاده از نرم افزار SPSS نسخه 15 آنالیز شد.

نتایج: فعالیت رنین پلاسمایی قبل از درمان در گروه اول و دوم به ترتیب 10/93 ± 30/99 و 8/65 ± 28/32 میلی گرم در لیتر بود (p value =0.43). اما پس از سه روز فعالیت رنین پلاسمایی به ترتیب در گروه اول و دوم 7/62 ± 12/94 و 8/23 ± 20/64 میلی گرم در لیتر به دست آمد (p value= 0.008). میزان کاهش فعالیت رنین پلاسمایی به طور معنا داری در دو گروه تفاوت داشت. میزان فیلتراسیون گلومرولی قبل از درمان در گروه اول و دوم به ترتیب 29/72 ± 73/98 و 32/73 ± 86/64 میلی لیتر در دقیقه محاسبه شد (p value = 0.25). با این حال پس از درمان میزان فیلتراسیون گلومرولی در گروه اول 33/5 ± 79/11 و در گروه دوم 39/38 ± 108/64 بود (p value = 0.03). میزان فیلتراسیون گلومرولی اما افزایش معنی داری در دو گروه نشان نداد.

نتیجه گیری: یافته های این مطالعه نشان داد تجویز کوتاه مدت میدودرین خوراکی سبب سرکوب معنی دار فعالیت رنین پلاسمایی و احتمالاً بهبود همودینامیک سیستمیک در بیماران سیروزی دارای آسیت و بدون ازوتمی می گردد.