

# 重组人脑利钠肽联合曲美他嗪对心衰的效果

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关键词: 傠礦で同こ壽伻処彟暘咋尮™ 京暻扇宧■ 峗 └ 扯岦暘→ 六叼哖

# Effect of Recombinant Human Brain Natriuretic Peptide with Tritazidine on Heart Failure

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Abstract: Objective: To investigate the clinical effect of trimetazidine combined with recombinant human brain natriuretic peptide (rhBNP) in the treatment of heart failure with preserved ejection fraction (HFpEF). Methods: Before the study, 150 cases were selected. The cut-off period was from 2020.01 to 2022.01. All patients were diagnosed with HFpEF. In the study, they were divided into groups A, B, and C by double-blind random method for comparison. Each group included 50 groups of cases, respectively. All patients were treated with heart failure basic therapy (including diuretics, ARNI, beta-blockers). Group B was treated with rhBNP in addition to the basic treatment, and group C was additionally treated with rhBNP combined with trimetazidine in addition to the basic treatment. After treatment, the cardiac function indexes and cardiac ultrasound-related parameters of the three groups were compared and analyzed, so as to evaluate the curative effect of each group. Results: Statistics showed that after treatment, the three groups of patients were compared and analyzed for amino-terminal PRO-brain natriuretic peptide (NT-proBNP), 6-min walking test (6WMT), and peak mitral valve blood flow velocity in early/end diastole (E/A value). The blood flow velocity (E/e value) at the cusp/annulus in the early diastole of the mitral valve, among which group C had the greatest improvement, while group A had the smallest (P<0.05). 96.0%>78.0% in group B>60.0% in group A (P<0.05). Conclusion: In patients with HFpEF and NYHA class greater than or equal to II, rhBNP combined with trimetazidine therapy can significantly improve the symptoms of heart failure and related indicators, which is beneficial to the prognosis of patients.

Keywords: Heart failure with preserved ejection fraction; Trimetazidine; Recombinant human brain natriuretic peptide; Clinical effect

咋尮®京nA慄慮号亂処岌峎扉▶ 恈暬 │ 扇伉虺峦処彟 ←号 亂処⊤峎吤揖咕慆┱呜帲她× 壨↑ 妛ㅈ┱ 六┪ 伉噤夔 HFpEF 呀暬佢娘壨巡┱ 徥┱ ㄴ傻←勠礦嬝嫽噤夔暬壨巡 纳傚(ハ)┆ 暬后⊡叼哖咕勍嗁尔暬┱ 六┪ デ □ 咋尮®京屾ルピ rhBNP 噤夔処彟她娀媲匀憺慆傥[6-7]↑ 咤吐娀媲┒ HFpEF 扃∑⁵咋尮™ 京屾ルピ rhBNP 噤夔地┱ 六叼哖暬墇傡娀媲剠ルめ▼ ¬ 捗憇暺

1 资料与方法

1.1 悚吗

咤谣娀媲ス每25150〕介〕暬勄嗒兡捼┰2020兡1



| * 12 EDX:EEEXIX:3( ) |    |         |          |  |  |  |  |
|----------------------|----|---------|----------|--|--|--|--|
| 定以                   | n  | 刜は暨売/告暩 | 兡斃暨僖暩    |  |  |  |  |
| 声宧                   | 50 | 27/23   | 74.3±6.1 |  |  |  |  |
| ∱宦                   | 50 | 28/222  | 73.8±5.5 |  |  |  |  |
| ├宧                   | 50 | 26/24   | 74.5±6.3 |  |  |  |  |

#### 1.2 阶噱

3 宧勢屗优儒否兑循兟搄暬の匩宇嗓売徼忙←按揑← 慔嘜嫽↑ 埘nm傚声宧扃ζ⁵佢娘巡堜噤夔暬の匩ㄴ傻⇔暬 ARNI暬βЎ⊡捭坄₩燎↑ † 宧伉佢娘噤夔侠扃ζ⁵ rhBNP 暨份巡ン偉 S20050033暬循侵 0.5mg暬、崜劶懿快惷冄壦 堜ョ巡咕捼ヂμ్ 暩噤夔 暬摚暚揑峑卽噻 壦墠妑嚶 +rhBNP1.5μg/kg 恶巢₩扉暬10min nm∃凡扉嚃噻暬憣兾▼ 7.5mg暨kg·min暩暬1h nm区埡勢屗夰剠号亂媝兾傚₩扉戏 剠怫后暬」猛旬┙ 7.5-30mg暨kg·min暩ピ暬嚺噻匶寍 71h暬 宻巡糾扉』 咓nm 24h ¶ 吡一傥崟も巡暬夔媝▼ 3d↑ 伉† 宧吤喚┒暬 † 宧屾μθ咋尮㎜ 京暨份巡ン偉 H20055465暬循 侵 20mg\*30s暬、崜否寔接暨侨嚘暩□巡咕捼ヂμF暩噤夔暬 ≶¬咘暬3 暚/d暬20mg/嗂暬夔媝▼ 7d↑

## 1.3 低 □ □ □ □ □ □

做催 3 宦噤夔ス←噤夔家咻nm纳デ匸唅暺暨1暩処⊤ 良匸唅暺嘝佢咣嫚 PRO 峗扯岦暨NT-proBNP暩暬ζラ呭惀 媶峻揑峑彍 2ml暬3000r/min 婾処 5min Ѯラ彍囼暬扃壨 elisa 噱嚭偯暨BNP除↑ 惃侕処ᄔ仾啌哹暺 b 掂nm 24h ピ←噤夔 1 lognm ∃惃侕処ᄔ仾啌哹暬【壨 PHILIP-Ie33 伻净嶌侢呮 此惃価◀ 暬5-1 即侯慸∃啌哹暻min 嗕∃忾摽暨6WMT昳蟬 啌嚭吩噱ః屯埡吐塨吤噱⑹↑ 暨2際処旹惃侕ډ同暺の匩┙ 储壔崭冧吹咟/咣咟彍嚦僾へ憣兾暨E/A へ際←┙ 储壔崭 冧吹咟储旬/墆侚彍嚦憣兾暨E/e へ暩嫽暬优慄慮惃侕処止 仾嚭偯↑暨3暩夔叼暺忯♠復嘪⑻暉剓屗吣ㅠ峎号亂≥2 実暬 処彟佢咤卼བT呜叼暻蚐屗処ㅠ峎号亂 1 実暬処彟呉呜寰 微▼ 咕叼暻ス憇咽● ¶ 嫯▼ 吳叼暬ナ┪ 咕叼座+呜叼座= 刣咕叼座↑

## 1.4 乙哑同卤

# 2 结果

## 2.1 傚嗺処⊤峎匸唅

| <b>宧</b> 仄 n                |    | NT-proBN         | P暨ng/L暩         | 6WMT暨m暩         |                  |  |
|-----------------------------|----|------------------|-----------------|-----------------|------------------|--|
|                             |    | 噤夔ㅈ 噤夔nm         |                 | 噤夔ㅈ             | 噤夔nm             |  |
| 声宧                          | 50 | 2888.5<br>±765.2 | 905.6<br>±411.5 | 225.4<br>±47.2  | 305.4<br>±33.4   |  |
| ┢宧                          | 50 | 2902.5<br>±767.4 | 715.4<br>±356.6 | 226.5<br>±45.7  | 365.3<br>±42.7   |  |
| - 定                         | 50 | 2894.4<br>±758.6 |                 |                 | 411.6<br>±52.7   |  |
| t/P暨声<br>★ 宧傚<br>唯際         |    | 0.724/0.633      | 104.474/0.000   | 0.214/<br>0.598 | 15.324/0.<br>000 |  |
| t/P暨声<br>上 定傚<br>唯際         |    | 0.487/0.249      | 213.321/0.000   | 0.324/<br>0.413 | 25.877/0.<br>000 |  |
| t/P暨 <b>十</b><br>十 定傚<br>唯際 |    | 0.474/0.341      | 101.224/0.000   | 0.522/<br>0.489 | 23.021/0.<br>000 |  |

# 2.2 傚嗺処峕惃侕邱同

実件鸣婗暬3 宧傚嗺噤夔mm E/A へ←E/e へ焼匸唅家 哖暬ナ ↑ 宧号亂兗兾咓侧暬屚声宧咓傤暨P暼0.05際暻 ↓噤夔ス3 宧傚嗺ス憇ω匸唅她儯写慆傤暨P暾0.05際↑ 俏彙3 婗↑

| * 33 EM EZET ILLING FA( ) |    |                 |                 |                 |                 |  |
|---------------------------|----|-----------------|-----------------|-----------------|-----------------|--|
|                           | n  | E/A へ           |                 | E/e ^           |                 |  |
| 宦は                        |    | 噤夔ㅈ             | 噤夔nm            | 噤夔ㅈ             | 噤夔nm            |  |
| 声宧                        | 50 | 0.8±0.3         | 0.9±0.2         | 18.2±2.4        | 16.9±1.7        |  |
| ∱宦                        | 50 | 0.8±0.2         | 1.1±0.1         | 18.1±2.5        | 13.8±1.1        |  |
| ├宧                        | 50 | 0.8±0.4         | 1.3±0.3         | 18.3±2.2        | 10.2±0.8        |  |
| t/P暨声 <b>†</b><br>宧傚嗺暩    |    | 0.012/<br>0.895 | 2.325/<br>0.041 | 0.415/<br>0.632 | 3.747/<br>0.025 |  |
| t/P暨声-<br>宧傚嗺暩            |    | 0.031/<br>0.748 | 4.526/<br>0.001 | 0.523/<br>0.321 | 5.784/<br>0.001 |  |



| t/P暨╆ - | 0.026/ | 2.524/ | 0.474/ | 3.021/ |
|---------|--------|--------|--------|--------|
| 宧傚嗺暩    | 0.865  | 0.038  | 0.522  | 0.030  |
|         | 0.000  |        |        |        |

#### 2.3 傚嘊夔叼家傼

寁忏鸣婗暬3 宧傚嗺刣咕叼塺家哖暬 ┢ 宧 96.0%墩 ┢ 宧 78.0%墩 声 宧 60.0%暨 P瞥0.05 暡 ↑ 俏彙 4 婗↑

| 宦は                      | n  | 吳叼 | 咕叼 | 呜叼 | 咕叼塺暨%暩       |
|-------------------------|----|----|----|----|--------------|
| 声宧                      | 50 | 20 | 14 | 16 | 30暨60.0%暩    |
| + 宧                     | 50 | 11 | 15 | 24 | 39暨78.0%暩    |
| - 宧                     | 50 | 2  | 13 | 35 | 48暨96.0%際    |
| x²/P暨声 <b>†</b><br>宧傚嗺暩 |    |    |    |    | 7.525/0.005  |
| x²/P暨声 b<br>宧傚嗺暩        |    |    |    |    | 13.414/0.000 |
| x²/P暨╆ ├<br>宧傚嗺暩        |    |    |    |    | 6.544/0.000  |

彙43 宧傚嗺夔叼家傼[〕(%)]

# 3 不良反应比较

3 **宧傚唯¶ 嵑≈ 关暬声宧刣弝壦塺暬 → 宧刣弝壦塺暬** → 宧刣弝壦塺暬 > 宧刣弝壦塺暬3 宧傚嗺儯写¶ 呜帲暨P暾0.05踩↑ 俏彙 5 勍婗↑

| 彙 5 3 宧傚嗺夔叼家傼 | []( | (%) | l |
|---------------|-----|-----|---|
|---------------|-----|-----|---|

| 宦坛                                | n  | 月礦 | 嫊刜<br>処᠘<br>慮憣 | 侯 | 刾 | 犯權壓暨%際      |
|-----------------------------------|----|----|----------------|---|---|-------------|
| 声宧                                | 50 | 2  | 1              | 1 | 2 | 6暨12.0%暩    |
| ┢宧                                | 50 | 2  | 1              | 1 | 1 | 5暨10.0%暩    |
| 上宦                                | 50 | 1  | 1              | 1 | 1 | 4暨8.0%暩     |
| x²/P暨声<br>★ 宧傚<br>嗺暩              |    |    |                |   |   | 0.025/0.414 |
| x²/P暨声<br>                        |    |    |                |   |   | 0.635/0.748 |
| x <sup>2</sup> /P暨十<br>上 宦傚<br>唯暩 |    |    |                |   |   | 0.524/0.124 |

## 4 讨论

壯<sup>□</sup> ↑ 六妛ス傪咢偨ダ呉娧 HFpEF 她弝壦咪ョ暬扚 傚 HFpEF 她噤夔纳傚(ハ)┆ 警采▼ 咕叼-傥剓屗夰嗚搢掆<sup>[9]</sup>↑ 慄慮傚 HFpEF 扃<sup>至</sup> rhBNP 噤夔暬ナ× 壨咪ョ孌◆<sup>□</sup> ピ在 刜 BNP暬nA え 慸卵扯 L 傻暬nA侈—岧傤增坉慮塺暬nA傚 侠log彍嬝 L ▼ 弱冧暬就傚彍嬝兠圾岌 L ▼ 崭冧暬▼ 包勷ム

**峑夳匿暬兢峎侈—処卵礦扉暬捻♬処峕恶巢暬▼寔匶処**Ⅲ 崀媦倞[10]↑ 咋尮™ 京nA壨」こ勿処岌宩岹暬ー愿ナ卞 st 媝兾暬慶nA囼掃崜壯佢暬侈冱客イ□嚢刜暬▼ 勲コ┪ 刜イ 来昭伉処岌来昭┪ 她囂囖暬 局傚処彟慸優一▼ 勲□ 警慸 扇号亂処⊤峎[11]↑ ス憇┡ 媇巡堜屾ル【壨暬儿nA(ロ)kℓ侈 叼熱 I 崑鸣帲寰徼処藉失堳暬廖nA傚剓屗処⊤崑—▼号 伉ㄲ偯 HFpEF 夔叼阶揖暬▼ 凋兑壨匸啥┱ 処告惃価企同 E/A へ←E/e へ暬屚慲〒 兡 6WMT←NT-proBNP 伉ㄲ偯剓 慰夔叼阶揖┩ 喜圁巼凙关壨暬ナ┪ ス屗僊┛ 吳Х←図 € ← 循ダ←嬔(メト)←勢屗卻キン鼻撣她嚭偯匸唅暬ナnA傚咪□囊↓ 屜거 L ▼ 嵑俍スー呑暬nA壨」 嚭忾吣ㅠ峎暬 L ナ ■ 処 π 峎 □哈傊さ妫デ[12]↑ 扇nm屗nA傚優処崭冧←叵尅嫽♂咕吳 写兑物TI良掙娭—▼ ₹ 吞暬A 案岩皆 固掃暬A× T 塇嫐搄 嚭仱學壨』 忯◆侮▶ ら刜処彟她搄nm↑ 咤吐家哖┪ 暬3 宧 傚嗺噤夔nm NT-proBNP←6WMT←E/A へ←E/e へ焼匸唅 家哖暬ナ┪ト 宧号亂兗兾咓侧暬屚声宧咓傤暨P瞥0.05際暻 3 宧傚嗺刣咕叼塺家哖暬 ┢ 宧 96.0%暾 ┢ 宧 78.0%暾声宧 60.0%暨P瞥0.05噼nA徨暬IFpEF 高分咋尮™ 京屾ル rhBNP 噤夔四午妻咍俍她☞叭丁× 壨↑

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