PRODUCT BRIEF

GIAPREZA[™] (angiotensin II) injection for intravenous infusion



Indication:

GIAPREZA is a vasoconstrictor to increase blood pressure in adults with septic or other distributive shock.

How supplied:

One glass vial of 1 mL containing 2.5 mg/mL of GIAPREZA

Dosage form and strength:

Injection: 2.5 mg/mL

Preparation

GIAPREZA can be mixed in 2 different infusion bag sizes corresponding to 2 different GIAPREZA concentrations: 250 mL (10 000 ng/mL of GIAPREZA) and 500 mL (5000 ng/mL of GIAPREZA).

Dosage and administration:

Dilute GIAPREZA in 0.9% sodium chloride prior to use. See full Prescribing Information for instructions on preparation and administration of injection. Diluted solution may be stored at room temperature or under refrigeration and should be discarded after 24 hours. GIAPREZA must be administered as an intravenous infusion. Administration via central line is recommended. If peripheral administration of GIAPREZA is needed, historically, the doses of angiotensin II given via a peripheral line were ≤10 ng/kg/min^a, as a low concentration of 1 mL angiotensin II diluted in 1000 mL normal saline (0.9% sodium chloride [NS]). GIAPREZA should NOT be administered in the same peripheral line as other vasopressors. Blood pressure should be closely monitored. Start GIAPREZA intravenously at 20 ng/kg/min. Titrate as frequently as every 5 minutes by increments of up to 15 ng/kg/min as needed. During the first 3 hours, the maximum dose should not exceed 80 ng/kg/min. Maintenance dose should not exceed 40 ng/kg/min.

Contraindications:

None

Warnings and precautions:

The safety of GIAPREZA was evaluated in 321 adults with septic or other distributive shock in the randomized, double-blind, placebo-controlled ATHOS-3 study. There was a higher incidence of arterial and venous thrombotic and thromboembolic events in patients who received GIAPREZA compared with placebo-treated patients in the ATHOS-3 study (13% [21/163 patients] vs 5% [8/158 patients]). The major imbalance was in deep venous thromboses. Use concurrent venous thromboembolism prophylaxis.

Efficacy:

The Angiotensin II for the Treatment of High-Output Shock (ATHOS-3) trial was a double-blind study in which 321 adults with septic or other distributive shock who remained hypotensive despite fluid and vasopressor therapy were randomized 1:1 to GIAPREZA or placebo, both in addition to standard of care. Doses of GIAPREZA or placebo were titrated to a target mean arterial pressure (MAP) of \geq 75 mmHg during the first 3 hours of treatment while doses of other vasopressors were maintained. From Hour 3 to Hour 48, GIAPREZA or placebo were titrated to maintain MAP between 65 and 70 mmHg while reducing doses of other vasopressors. The primary endpoint was the percentage of subjects who achieved either a MAP \geq 75 mmHg or a \geq 10 mmHg increase, from baseline in MAP without an increase in baseline vasopressor therapy at 3 hours. The primary endpoint was achieved by 70% of patients randomized to GIAPREZA compared with 23% of placebo subjects; *P*< 0.0001 (a treatment effect of 47%). In the GIAPREZA-treated group the median dose of GIAPREZA was 10 ng/kg/min at 30 minutes, the median response time for responders was approximately 5 minutes.

Common adverse reactions:

The most common adverse reactions reported in greater than 10% of GIAPREZA-treated patients were thromboembolic events. Adverse reactions occurring in \geq 4% of patients treated with GIAPREZA and \geq 1.5% more often than placebo-treated patients in the ATHOS-3 study were thromboembolic events (including deep vein thrombosis), thrombocytopenia, tachycardia, fungal infection, delirium, acidosis, hyperglycemia, and peripheral ischemia.

Drug interactions:

Angiotensin converting enzyme inhibitors may increase response to GIAPREZA. Angiotensin II receptor blockers may reduce response to GIAPREZA

Pricing information

Whole acquisition cost (WAC) = \$1500 per vial^b

Coding & Reimbursement

Effective October 1, 2018 (Fiscal Year 2019), Medicare will provide an add-on payment for GIAPREZA of **up to \$1500** per qualifying case to Inpatient Prospective Payment System (IPPS)-participating acute care hospitals.° This add-on payment will be incremental to the Medicare Severity Diagnosis Related Group (MS-DRG) reimbursement for qualifying Medicare inpatient cases based on the cost of the case. Hospitals report the use of GIAPREZA by recording an ICD-10 procedure code (ICD-10-PCS code) on the claim billed to Medicare. These codes accompany the other ICD-10-PCS codes billed for the inpatient services.

What is the NTAP?

The NTAP was implemented to ensure access of new, clinically beneficial technologies to Medicare beneficiaries while the prospective payment system is recalibrated to reflect the cost of new technology. CMS reimburses hospitals up to 50% of the average cost related to the use of an eligible new technology in addition to the prospective MS-DRG payment.

The NTAP is granted only to technologies that meet 3 primary criteria:

- 1. It must be new
- 2. It must be inadequately reimbursed under the MS-DRG system
- 3. It must be a substantial clinical improvement over other existing treatment options

| Eligible facilities | IPPS-participating acute care hospitals |
|------------------------------------|---|
| Setting of care | IPPS inpatient hospital |
| Eligible patients | Medicare-eligible patients |
| ICD-10 PCS-codes ^{d, e} : | XW043H4 Introduction of synthetic human angiotensin II into central vein |
| | XW033H4 Introduction of synthetic human angiotensin II into peripheral vein |

Summary of NTAP details for GIAPREZA

^bGIAPREZA. In: Medi-Span Price Rx [pricerx.medispan.com]. Accessed January 2018.

^cHospitals not reimbursed under the IPPS, including but not limited to critical access hospitals, excluded cancer hospitals, longterm acute care hospitals, Veterans Affairs hospitals, Department of Defense facilities, and hospitals in the state of Maryland, are not eligible to receive add-on payments.

^dThis information is subject to change, and providers should consult relevant references for the description of each code to determine its appropriateness.

^eThis list is not designed to be a comprehensive list of procedure codes for any given case. Other procedure codes may be appropriate and submitted to payers. Providers are solely responsible for determining the appropriate codes in billing payers. It is the provider's responsibility to determine and submit appropriate codes, charges, and modifiers for the products and services rendered. Before filing any claim, providers should verify these requirements in writing with specific payers.

Publicly available ATHOS-3 and GIAPREZA related references

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- McCurdy M, Busse LW, Gong MN, et al. Association of angiotensin II dose with all-cause mortality in patients with vasodilatory shock [abstract P124]. *Crit Care*. 2018;22(suppl 1):82(50).
 Abstract P124: <u>https://ccforum.biomedcentral.com/articles/10.1186/s13054-018-1973-5#Sec368</u> Poster P124: <u>https://isicem.esn.eu/posters_listing/see_poster/312/2018/jury</u>
- Busse L, Albertson T, Gong M, et al. Outcomes in patients with acute respiratory distress syndrome receiving angiotensin II for vasodilatory shock [abstract P125]. *Crit Care*. 2018;22 (suppl 1):82(50). Abstract P125: <u>https://ccforum.biomedcentral.com/articles/10.1186/s13054-018-1973-5#Sec371</u> Poster P125: <u>https://isicem.esn.eu/posters_listing/see_poster/65/2018</u>
- 11. Chow JH, Galvagno SM Jr, Tanaka KA, et al. When all else fails: novel use of angiotensin II for vasodilatory shock: a case report [published online ahead of print April 23, 2018]. *A A Pract.* doi:10.1213/XAA.00000000000775.
- 12. Senatore F, Jagadeesh G, Rose M et al. FDA Approval of Angiotensin II for the Treatment of Hypotension in Adults with Distributive Shock. Am J Cardiovasc Drugs. 2018. doi:10.1007/s40256-018-0297-9

Please see full Prescribing Information at www.giapreza.com





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