

For the use only of a Registered Medical Practitioner or a Hospital or a Laboratory

Vasopressin Injection IP 20Units/1ml

Qvasp®

क्युवास्प

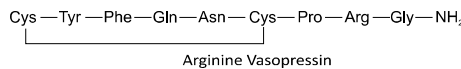
Rx Only

COMPOSITION:

Vasopressin Injection IP 20 Units / 1 ml
Each ml contains
Vasopressin IP 20Units
(Synthetic Origin)
Sterile Water for Injection IP q.s.

DESCRIPTION:

Vasopressin Injection IP 20 Units / 1ml is a clear colorless solution free from visible extraneous particulate matter.
Vasopressin Injection IP is a sterile solution of synthetic vasopressin of the posterior pituitary gland for intramuscular (IM) or subcutaneous (SC) or intravenous (IV) use. It is substantially free from the oxytocic principle and is standardized to contain 20 pressor units/ml. The chemical name is Vasopressin, 8-L-arginine and has the following structural formula:



Vasopressin, 8-L-arginine

$\text{C}_{64}\text{H}_{105}\text{N}_{15}\text{O}_{12}\text{S}_2$

Mol. Wt.1084.2

CLINICAL PHARMACOLOGY:

The antidiuretic action of vasopressin is ascribed to increasing reabsorption of water by the renal tubules.
Vasopressin can cause contraction of smooth muscle of the gastrointestinal tract and of all parts of the vascular bed, especially the capillaries, small arterioles, and venules with less effect on the smooth musculature of the large veins. The direct effect on the contractile elements is neither antagonized by adrenergic blocking agents nor prevented by vascular denervation.
Following subcutaneous or intramuscular administration of vasopressin injection, the duration of antidiuretic activity is variable but effects are usually maintained for 2 to 8 hours.
The majority of a dose of vasopressin is metabolized and rapidly destroyed in the liver and kidneys. Vasopressin has a plasma half-life of about 10 to 20 minutes. Approximately 5% of a subcutaneous dose of vasopressin is excreted in urine unchanged after 4 hours.

Mechanism of Action:

The vasoconstrictive effects of vasopressin are mediated by vascular V_1 receptors. Vascular V_1 receptors are directly coupled to phospholipase C, resulting in release of calcium, leading to vasoconstriction. In addition, vasopressin stimulates antidiuresis via stimulation of V_2 receptors which are coupled to adenyl cyclase.

Pharmacodynamics:

At therapeutic doses exogenous vasopressin elicits a vasoconstrictive effect in most vascular beds including the splanchnic, renal and cutaneous circulation. In addition, vasopressin at pressor doses triggers contractions of smooth muscles in the gastrointestinal tract mediated by muscular V_1 receptors and release of prolactin and ACTH via V_1 receptors. At lower concentrations typical for the antidiuretic hormone vasopressin inhibits water diuresis via renal V_2 receptors. In patients with vasodilatory shock vasopressin in therapeutic doses increases systemic vascular resistance and mean arterial blood pressure and reduces the dose requirements for norepinephrine. Vasopressin tends to decrease heart rate and cardiac output. The pressor effect is proportional to the infusion rate of exogenous vasopressin. Onset of the pressor effect of vasopressin is rapid, and the peak effect occurs within 15 minutes. After stopping the infusion the pressor effect fades within 20 minutes. There is no evidence for tachyphylaxis or tolerance to the pressor effect of vasopressin in patients.

Pharmacokinetics:

At infusion rates used in vasodilatory shock (0.01-0.1 units/minute) the clearance of vasopressin is 9 to 25 ml/min/kg in patients with vasodilatory shock. The apparent $t_{1/2}$ of vasopressin at these levels is ≤ 10 minutes. Vasopressin is predominantly metabolised and only about 6% of the dose is excreted unchanged in urine. Animal experiments suggest that the metabolism of vasopressin is primarily by liver and kidney. Serine protease, carboxypeptidase and disulfide oxido-reductase cleave vasopressin at sites relevant for the pharmacological activity of the hormone. Thus, the generated metabolites are not expected to retain important pharmacological activity.

INDICATIONS AND USAGE:

Vasopressin Injection is indicated for prevention and treatment of postoperative abdominal distention, in abdominal roentgenography to displace interfering gas shadows, and in diabetes insipidus.
It is indicated to increase blood pressure in adults with vasodilatory shock (e.g., post-cardiotomy or sepsis) who remain hypotensive despite fluids and catecholamines.

CONTRAINDICATIONS:

Anaphylaxis or hypersensitivity to the drug or its components.

WARNINGS:

This drug should not be used in patients with vascular disease, especially disease of the coronary arteries, except with extreme caution. In such patients, even small doses may precipitate anginal pain, and with larger doses, the possibility of myocardial infarction should be considered.
Vasopressin may produce water intoxication. The early signs of drowsiness, listlessness, and headaches should be recognized to prevent terminal coma and convulsions.

PRECAUTIONS:

General

Vasopressin should be used cautiously in the presence of epilepsy, migraine, asthma, heart failure, or any state in which a rapid addition to extracellular water may produce hazard for an already overburdened system.
Chronic nephritis with nitrogen retention contraindicates the use of vasopressin until reasonable nitrogen blood levels have been attained.

Laboratory Tests

Electrocardiograms (ECG) and fluid and electrolyte status determinations are recommended at periodic intervals during therapy.

Pregnancy

Pregnancy Category C.

Animal reproduction studies have not been conducted with Vasopressin. It is also not known whether Vasopressin can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Vasopressin should be given to a pregnant woman only if clearly needed.

Labor and Delivery

Doses of vasopressin sufficient for an antidiuretic effect are not likely to produce tonic uterine contractions that could be deleterious to the fetus or threaten the continuation of the pregnancy.

Nursing Mothers

Caution should be exercised when Vasopressin Injection is administered to a nursing woman.

Drug Interactions:

1) The following drugs may potentiate the antidiuretic effect of vasopressin when used concurrently: carbamazepine, chlor-propamide, clofibrate, urea, fludrocortisone and tricyclic antidepressants.

- 2) The following drugs may decrease the antidiuretic effect of vasopressin when used concurrently: demeclocycline, Norepinephrine, lithium, heparin and alcohol.
- 3) Ganglionic blocking agents may produce a marked increase in sensitivity to the pressor effects of vasopressin.

ADVERSE REACTIONS

Local or systemic allergic reactions may occur in hypersensitive individuals. The following side effects have been reported following the administration of vasopressin.

Body as a Whole: anaphylaxis (cardiac arrest and/or shock) has been observed shortly after injection of vasopressin.

Cardiovascular: cardiac arrest, circumoral pallor, arrhythmias, decreased cardiac output, angina, myocardial ischemia, peripheral vasoconstriction and gangrene.

Gastrointestinal: abdominal cramps, nausea, vomiting, passage of gas.

Nervous System: tremor, vertigo, "pounding" in head.

Respiratory: bronchial constriction.

Skin and Appendages: sweating, urticaria, cutaneous gangrene.

Gastrointestinal disorders: Mesenteric ischemia

Hepatobiliary: Increased bilirubin levels

Renal/urinary disorders: Acute renal insufficiency

Vascular disorders: Distal limb ischemia

Metabolic: Hyponatremia

Skin: Ischemic lesions

Information for Patients:

Side effects such as blanching of skin, abdominal cramps, and nausea may be reduced by taking 1 or 2 glasses of water at the time of vasopressin administration. These side effects are usually not serious and probably will disappear within a few minutes.

DOSAGE AND ADMINISTRATION:

Vasopressin Injection 20 may be administered subcutaneously or intramuscularly or intravenously.

Ten units of Vasopressin Injection (0.5 ml) will usually elicit full physiologic response in adult patients; 5 units will be adequate in many cases. Vasopressin Injection should be given intramuscularly at 3- or 4-hour intervals as needed. The dosage should be proportionately reduced for pediatric patients. (For an additional discussion of dosage, consult the section below.)

When determining the dose of Vasopressin Injection for a given case, the following should be kept in mind.

It is particularly desirable to give a dose not much larger than is just sufficient to elicit the desired physiologic response.

Excessive doses may cause undesirable side effects: blanching of the skin, abdominal cramps, nausea which, though not serious, may be alarming to the patient. Spontaneous recovery from such side effects occurs in a few minutes. It has been found that one or two glasses of water given at the time Vasopressin Injection is administered reduce such symptoms.

Abdominal Distention:

In the average postoperative adult patient, give 5 units (0.25 ml) initially; increase to 10 units (0.5 ml) at subsequent injections if necessary. It is recommended that Vasopressin Injection be given intramuscularly and that injections be repeated at 3- or 4-hour intervals as required. Dosage to be reduced proportionately for pediatric patients.

Vasopressin Injection used in this manner will frequently prevent or relieve postoperative distention. These recommendations apply also to distention complicating pneumonia or other acute toxemias.

Abdominal Roentgenography:

For the average case, two injections of 10 units each (0.5 ml) are suggested. These should be given two hours and one-half hour, respectively, before films are exposed. Many roentgenologists advise giving an enema prior to the first dose of Vasopressin Injection.

Diabetes Insipidus:

Vasopressin Injection may be given by injection or administered intranasally on cotton pledgets, by nasal spray, or by dropper. The dose by injection is 5 to 10 units (0.25 to 0.5 ml) repeated two or three times daily as needed.

When Vasopressin Injection is administered intranasally by spray or on pledgets, the dosage and interval between treatments must be determined for each patient.

Parenteral products should be inspected visually for particulate matter and discoloration prior to use, whenever solution and container permit.

Preparation of Diluted Solutions

Dilute Qvasp in normal saline (0.9% sodium chloride) or 5% dextrose in water (D5W) prior to use. Discard unused diluted solution after 18 hours at room temperature or 24 hours under refrigeration.

Table 1 Preparation of diluted solutions

Fluid restriction?	Final concentration	Mix	
		Qvasp	Diluent
No	0.1 units/ml	2.5 ml (50 units)	500 ml
Yes	1 unit/ml	5 ml (100 units)	100 ml

Inspect parenteral drug products for particulate matter and discoloration prior to use, whenever solution and container permit.

Administration

The goal of treatment is optimization of perfusion to critical organs, but aggressive treatment can compromise perfusion of organs, like the gastrointestinal tract, whose function is difficult to monitor. The following advice is empirical. In general, titrate to the lowest dose compatible with a clinically acceptable response.

For post-cardiotomy shock, start with a dose of 0.03 units/minute. For septic shock, start with a dose of 0.01 units/minute. If the target blood pressure response is not achieved, titrate up by 0.005 units/minute at 10- to 15-minute intervals. The maximum dose for post-cardiotomy shock is 0.1 units/minute and for septic shock 0.07 units/minute. After target blood pressure has been maintained for 8 hours without the use of catecholamines, taper Vasostrict by 0.005 units/minute every hour as tolerated to maintain target blood pressure.

Overdosage:

Water intoxication may be treated with water restriction and temporary withdrawal of vasopressin until polyuria occurs. Severe water intoxication may require osmotic diuresis with mannitol, hypertonic dextrose, or urea alone or with furosemide.

Overdosage with Qvasp can be expected to manifest as consequences of vasoconstriction of various vascular beds (peripheral, mesenteric, and coronary) and as hyponatremia. In addition, overdosage may lead less commonly to ventricular tachyarrhythmias (including Torsade de Pointes), rhabdomyolysis, and non-specific gastrointestinal symptoms.

Direct effects will resolve within minutes of withdrawal of treatment.

STORAGE: Store at the temperature between 2°C and 8°C (36°F to 46°F). Do not freeze.

HOW SUPPLIED:

Vasopressin Injection IP 20Units / 1ml

5 Ampoules of 1 ml each, packed in a carton.

SHELF LIFE:

Refer Pack.

Marketed by:



Questus Pharma Private Limited

First Floor, Plot No.25-4/3, Phase XV, KPMB Colony, Kukatpally, Medchal-Malkajgiri District, Telangana State, India.

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Manufactured by:

Questus Pharma Private Limited

At: Village Rampur Jattan, Trilokpur Road, Kala Amb, District Simour-173030 (H.P.)

Product Name: Vasopressin Injection IP 20Units/1ml

Brand Name: Qvasp

Dimensions: 65 x 145 mm

Pantone Colours: 1

Pantone Black C