Qbrelis™ (lisinopril) – New Drug Approval

- On July 29, 2016, Silvergate announced the FDA approval of Qbrelis (lisinopril) oral solution, for three indications: treatment of hypertension in adult patients and pediatric patients ≥ 6 years of age to lower blood pressure, to reduce signs and symptoms of systolic heart failure, and for the reduction of mortality in treatment of hemodynamically stable patients within 24 hours of acute myocardial infarction (AMI).
    - In hypertension, Qbrelis may be administered alone or with other antihypertensive agents.
    - For the reduction of mortality in AMI, patients should receive, as appropriate, the standard recommended treatments such as thrombolytics, aspirin, and beta-blockers.
- Qbrelis contains lisinopril, an angiotensin converting enzyme (ACE) inhibitor, and is the first FDA-approved lisinopril oral solution.
    - Epaned™ (enalapril maleate) oral solution is a related product indicated for hypertension in patients ≥ 1 month of age; heart failure, usually in combination with diuretics and digitalis; and asymptomatic left ventricular dysfunction (ie, ejection fraction ≤ 35%).
- The approval of Qbrelis was based on established clinical trials for lisinopril in hypertension, heart failure, and AMI.
    - Qbrelis is bioequivalent to lisinopril tablets under fasted and fed conditions in adult patients.
    - In pediatric patients (6 – 16 years old with glomerular filtrate rate [GFR] > 30 mL/min/1.73 m^2), the pharmacokinetics of lisinopril were similar to those values obtained in adults. The typical value of lisinopril oral clearance (systemic clearance/absolute bioavailability) in a child weighing 30 kg is 10 L/h, which increases in proportion to renal function.
- Qbrelis is contraindicated in patients with a history of angioedema or hypersensitivity related to previous treatment with an ACE inhibitor, patients with hereditary or idiopathic angioedema, and when co-administered with aliskiren in patients with diabetes.
- Similar to other lisinopril-containing products, Qbrelis carries a boxed warning regarding the risk of fetal toxicity.
- Other warnings and precautions of Qbrelis include impaired renal function, hypotension, hyperkalemia, and hepatic failure.
- In hypertensive patients, the most common adverse events (2% greater than placebo) with Qbrelis use were headache, dizziness, and cough.
- In heart failure patients, the most common adverse events (2% greater than placebo) with Qbrelis use were hypotension and chest pain.
- In patients with AMI, the most common adverse event (2% greater than placebo) with Qbrelis use was hypotension.
- The recommended dose of Qbrelis is based on the specific indication and patient age.

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Indication	Starting Dosing Regimen
Adult hypertension	10 mg orally once daily
Pediatric hypertension in patients ≥ 6 years old and GFR > 30 mL/min/1.73 m^2	0.07 mg/kg (up to 5 mg total) orally once daily
Heart failure	5 mg orally once daily
AMI	5 mg orally within 24 hours of MI followed by 5 mg after 24 hours, then 10 mg once daily

- Silvergate's launch plans for Qbrelis are pending. Qbrelis will be available through an extensive network of pharmacies and a qualified mail order service as a 1 mg/mL oral solution with a sweet taste in a 150 mL bottle.