Elements for a public summary

VI.2.1 Overview of disease epidemiology

Olmesartan is used for treating high blood pressure (hypertension) in adult patients.

Essential hypertension[1]

Worldwide, it is estimated that 1 billion people are hypertensive, accounting for an estimated 7.1 million deaths per year. It is becoming an increasingly common problem because of increased longevity and the prevalence of contributing factors such as obesity, physical inactivity, and unhealthy diet. The prevalence in many developing countries, particularly urban societies, is already as high as those seen in developed countries.

The prevalence of essential hypertension in the US was estimated to be 65 million people in 2000, compared with 50 million people in 1990. The incidence increases with age in people of all ancestries and both sexes. Prevalence is higher in men than in women before 60 years of age, but equal after this age. The lifetime risk is 90% for men and women who were normotensive at 55 years of age and survive to 80 years.

VI.2.2 Summary of treatment benefits

The marketing authorizations for olmesartan are for generic medicinal products. Their treatment benefits are thought to be similar to the ones proposed by the innovator. Olmesartan is a nonpeptide angiotensin II antagonist that selectively blocks the binding of angiotensin II to the AT 1 receptors in tissues such as vascular smooth muscle in blood vessel walls and the adrenal gland. Olmesartan, by blocking the binding of angiotensin II to the AT 1 receptors, promotes vasodilation and decreases the effects of aldosterone. The negative feedback regulation of angiotensin II on renin secretion is also inhibited, resulting in a rise in plasma renin concentrations and a consequent rise in angiotensin II plasma concentrations. However, these effects do not counteract the blood pressure–lowering effect that occurs.

VI.2.3 Unknowns relating to treatment benefits

There are no data available on use in paediatric patients during breastfeeding or in patients with severe hepatic impairment.

VI.2.4 Summary of safety concerns

Important identified risks

[1] http://bestpractice.bmj.com/best-practice/monograph/26/basics/epidemiology.html

Risk	What is known	Preventability
Kidney impairment, low blood pressure and high potassium levels in case of co-administration of 2 different drugs which affect renin-angiotensin-aldosteron system **(Renal dysfunction, hypotension and hyperkalaemia as consequence of dual RAAS* blockade)**	Changes in kidney function, low blood pressure and high potassium levels have been reported in some individuals who were treated with another medicine which affect renin-angiotensin-aldosteron system.	Yes, by monitoring of biochemical laboratory tests.
disease with Celiac-like symptoms **(Sprue-like enteropathy)**	This condition was reported in very rare cases. Symptoms include severe, chronic diarrhea, malnutrition and substantial weight loss. It is possibly caused by a delayed hypersensitivity reaction. If you develop these symptoms during treatment with olmesartan, your doctor should exclude other causes.	In case you experience severe, chronic diarrhea and weight loss you should consult with doctor. If disease with Celiac-like symptoms (Sprue-like enteropathy) is confirmed, treatment with olmesartan should be stopped.
Drug Use During Pregnancy (Exposure during the 2nd and 3rd trimester of pregnancy)	Drugs taken by a pregnant woman reach the fetus primarily by crossing the placenta, the same route taken by oxygen and nutrients, which are needed for the fetus's growth and development. Drugs that a pregnant woman takes during pregnancy can affect the fetus in several ways, for example, drugs that lower the mother's blood pressure may reduce blood flow to the placenta and thus reduce the supply of oxygen and nutrients to the fetus.	You must tell your doctor if you think that you are (or might become) pregnant. Your doctor will normally advise you to stop taking this drug before you become pregnant or as soon as you know you are pregnant and will advise you to take another medicine instead of this drug. Olmesartan medoxomil is not recommended in early pregnancy, and must not be taken when more than 3 months of pregnant, as it may cause serious harm to your baby if used after the third month of pregnancy.
Sudden kidney injury (Acute renal impairment)	Acute kidney failure occurs when your kidneys suddenly become unable to filter waste products from your blood. When your kidneys lose their filtering ability,	Your doctor may check your kidney function at regular intervals. Tell your doctor if you have any kidney problems.

Risk	What is known	Preventability
	dangerous levels of wastes may accumulate, and your blood's chemical makeup may get out of balance. Acute kidney failure — also called acute renal failure or acute kidney injury — develops rapidly over a few hours or a few days. Acute kidney failure is most common in people who are already hospitalized, particularly in critically ill people who need intensive care. Acute kidney failure can be fatal and requires intensive treatment. However, acute kidney failure may be reversible. If you're otherwise in good health, you may recover normal or nearly normal kidney function.	Do not take this drug if you impaired kidney function. In patients with mild to moderate kidney disease, your dose will not be higher than 20 mg once a day.
Abnormally low pressure of the blood called also low blood pressure (hypotension)	As with any medicine which reduces blood pressure, an excessive drop in blood pressure in patients with blood flow disturbances of the heart or brain could lead to a heart attack or stroke. Your doctor will therefore check your blood pressure carefully.	Other blood pressure lowering medicines, as the effect of this drug can be increased. Your doctor may need to change your dose and/or to take other precautions. If you are over 65 years of age and your doctor decides to increase your dose of olmesartan medoxomil to 40 mg daily, then you need to have your blood pressure regularly checked by your doctor to make sure that your blood pressure does not become too low. Your doctor may check your blood pressure at regular intervals. Tell your doctor if you have any of the following health problems: - if you are taking any of

Risk	What is known	Preventability
		the following medicines used to treat high blood pressure: - an ACE-inhibitor (for example enalapril, lisinopril, ramipril), in particular if you have diabetes-related kidney problems. - aliskiren
Increased potassium levels (Hyperkalaemia)	In hypokalemia, the level of potassium in blood is too low. A low potassium level has many causes but usually results from vomiting, diarrhea, adrenal gland disorders, or use of diuretics. A low potassium level can make muscles feel weak, cramp, twitch, or even become paralysed, and abnormal heart rhythms may develop. The diagnosis is based on blood tests to measure the potassium level.	Your doctor may check the patinets amount of electrolytes (e.g. potassium) in your blood at regular intervals. You should tell your doctor if you have problems in increased levels of potassium in your blood. Potassium supplements, a salt substitute which contains potassium, water tablets (diuretics) or heparin (for thinning the blood). Using these medicines at the same time as this drug may raise the levels of potassium in your blood.
Drug-drug interaction with lithium (a medicine used to treat mood swings and some types of depression)	The effect a drug has on a person may be different than expected because that drug interacts with another drug the person is taking (drug-drug interaction). The effects of drug interactions are usually unwanted and sometimes harmful. Interactions may increase or decrease the actions of one or more drugs, resulting in side effects or failed treatment.	You should tell your doctor or pharmacist if you take, have recently taken or might be taking any other medicines such as Lithium (a medicine used to treat mood swings and some types of depression) used at the same time as this drug may increase the toxicity of lithium. If you have to take lithium, your doctor will measure your lithium blood levels.
Drug-drug interaction with medicines used to relieve pain, swelling and other symptoms of inflammation, including arthritis (NSAID- Non-Steroidal Anti-Inflammatory).	The effect a drug has on a person may be different than expected because that drug interacts with another drug	You should tell your doctor or pharmacist if you take, have recently taken or might be taking any other medicines such as: Non-Steroidal Anti-Inflammatory (NSAIDs)

Risk	What is known	Preventability
	the person is taking (drug-drug interaction). The effects of drug interactions are usually unwanted and sometimes harmful. Interactions may increase or decrease the actions of one or more drugs, resulting in side effects or failed treatment.	medicines (medicines used to relieve pain, swelling and other symptoms of inflammation, including arthritis) used at the same time as this drug may increase the risk of kidney failure and the effect of this drug can be decreased by NSAIDs.
Allergic reactions (Hypersensitivity reactions)	Allergic (hypersensitivity) reactions to a drug are relatively uncommon. In contrast to other types of adverse drug reactions, the number and severity of allergic reactions do not usually correlate with the amount of drug taken. For people who are allergic to a drug, even a small amount of the drug can trigger an allergic reaction. These reactions range from minor and simply annoying to severe and life threatening . Examples are rashes and itching; fever; constriction of the airways and wheezing; swelling of tissues (such as the voice box [larynx] and the opening between the vocal cords that closes to stop the flow of air to the lungs [glottis]), which impairs breathing; and a fall in blood pressure, sometimes to dangerously low levels.	Uncommon side effects of this drug can be quick allergic reactions that may affect the whole body and may cause breathing problems as well as a rapid fall of blood pressure that may even lead to fainting (anaphylactic reactions), vertigo, vomiting, weakness, feeling unwell, muscular pain, skin rash, allergic skin rash, itching, exanthema (skin eruption), skin lumps (wheals), angina (pain or uncomfortable feeling in the chest).
Impaired flow of bile (Cholestasis)	With cholestasis, the flow of bile (the digestive fluid produced by the liver) is impaired at some point between the liver cells (which produce bile) and the duodenum (the first segment of the small intestine). When bile flow is stopped, the pigment bilirubin (a waste product formed when old or	Do not take this medicine if you suffer from yellowing of the skin and eyes (jaundice) or problems with drainage of the bile from the gallbladder (biliary obstruction e.g. gallstones).

Risk	What is known	Preventability
	damaged red blood cells are broken down) escapes into the bloodstream and accumulates. Normally, bilirubin binds with bile in the liver, moves through the bile ducts into the digestive tract, and is eliminated from the body. Most bilirubin is eliminated in stool, but a small amount is eliminated in urine.	

*RAAS - renin-angiotensin-aldosteron system.

Important potential risks

Risk	**What is known (Including reason why it is considered a potential risk)**
Drug Use During Pregnancy (Exposure during the 1st trimester of pregnancy)	Drugs taken by a pregnant woman reach the fetus primarily by crossing the placenta, the same route taken by oxygen and nutrients, which are needed for the fetus's growth and development. Drugs that a pregnant woman takes during pregnancy can affect the fetus in several ways, for example, drugs that lower the mother's blood pressure may reduce blood flow to the placenta and thus reduce the supply of oxygen and nutrients to the fetus.
Skeletal muscle destruction **(Rhabdomyolysis)**	There are no data suggesting causal relationship between olmesartan and rhabdomyolysis. Single cases of rhabdomyolysis have been reported in temporal association with the intake of the group of medicine to which olmesartan belongs (angiotensin II receptor blockers). Rhabdomyolysis is potentially life threatening muscle damage and due to the seriousness of the condition and its potential public health impact, rhabdomyolysis is monitored to detect potential relationship between olmesartan use and rhabdomyolysis.
Use during breastfeeding	If you are breast-feeding ask your doctor or pharmacist for advice before taking this medicine. Tell your doctor if you are breast-feeding or about to start breast-feeding. <Invented name> is not recommended for mothers who are breast-feeding, and your doctor may choose another treatment for you if you wish to breast-feed, especially if your baby is newborn, or was born prematurely.
Use in severe liver impairment	Liver failure occurs when large parts of the liver become damaged beyond repair and the liver is no longer able to function. Liver failure is a life-threatening condition that demands urgent medical care. Most often, liver failure occurs gradually and over many years. However, a more rare condition known as acute liver failure occurs rapidly (in as little as 48 hours) and can be difficult

	to detect initially. Tell your doctor if you have liver disease.

Missing information

Risk	What is known
Use in children and adolescents (less than 18 years of age) **(Use in paediatric patients)**	This product is not recommended in children and adolescents (less than 18 years of age) since safety of the product has not yet been established.
The use in patients with severe renal impairment and in patients with a recent kidney transplant	There is no experience of the administration of olmesartan medoxomil in patients with a recent kidney transplant or in patients with end-stage renal impairment, therefore use of this product is not recommended in patients with severe renal impairment.

VI.2.5 Summary of risk minimisation measures by safety concern

All medicines have a Summary of Product Characteristics (SmPC) which provides physicians, pharmacists and other health care professionals with details on how to use the medicine, the risks and recommendations for minimising them. An abbreviated version of this in lay language is provided in the form of the package leaflet (PL). The measures in these documents are known as routine risk minimisation measures.

This medicine has no additional risk minimisation measures.

VI.2.6 Planned post authorisation development plan

Not applicable. No postauthorisation studies are planned.

VI.2.7 Summary of changes to the Risk Management Plan over time

Not applicable, this is the first Risk management plan.