

should be interrupted or discontinued if ulcerative keratitis is diagnosed.

- **CONTRA-INDICATIONS** Interstitial pulmonary disease · the combination of panitumumab with oxaliplatin-containing chemotherapy is contra-indicated in patients with mutant RAS metastatic colorectal cancer or for whom RAS status is unknown
- **CAUTIONS** History of keratitis · history of severe dry eye · history of ulcerative keratitis · pulmonary disease—discontinue if interstitial lung disease develops · risk factors for keratitis · risk factors for severe dry eye · risk factors for ulcerative keratitis (including contact lens use)
- **INTERACTIONS** → Appendix 1: monoclonal antibodies
- **SIDE-EFFECTS**
 - ▶ **Common or very common** Alopecia · anaemia · anxiety · appetite decreased · asthenia · chest pain · chills · constipation · cough · dehydration · diarrhoea · dizziness · dry eye · dry mouth · dyspnoea · electrolyte imbalance · embolism and thrombosis · eye discomfort · eye disorders · eye inflammation · fever · flushing · gastrointestinal discomfort · gastroesophageal reflux disease · haemorrhage · hair changes · headache · hyperglycaemia · hyperhidrosis · hypersensitivity (may be delayed) · hypertension · hypotension · increased risk of infection · insomnia · leucopenia · mucositis · nail disorders · nausea · oral disorders · pain · peripheral oedema · skin reactions · skin ulcer · tachycardia · vomiting · weight decreased
 - ▶ **Uncommon** Angioedema · cyanosis · infusion related reaction · nasal dryness · onycholysis · respiratory disorders · severe cutaneous adverse reactions (SCARs)
 - ▶ **Rare or very rare** Anaphylactic reaction
- **CONCEPTION AND CONTRACEPTION** Manufacturer advises effective contraception during and for 6 months after treatment.
- **PREGNANCY** Avoid (toxicity in *animal studies*). See also *Pregnancy and reproductive function* in Cytotoxic drugs p. 938.
- **BREAST FEEDING** Manufacturer advises avoid breastfeeding during and for 2 months after treatment.
- **PRE-TREATMENT SCREENING** Evidence of non-mutated RAS status (at exons 2, 3 and 4 of KRAS and NRAS) is required before panitumumab treatment is initiated, and should be determined by an experienced laboratory using a validated test method.
- **MONITORING REQUIREMENTS**
 - ▶ Monitor for hypomagnesaemia.
 - ▶ Monitor for hypocalcaemia.
 - ▶ Monitor for dermatological reactions including Stevens-Johnson syndrome and toxic epidermal necrolysis (consult product literature).
- **NATIONAL FUNDING/ACCESS DECISIONS**

NICE decisions

 - ▶ **Cetuximab, bevacizumab and panitumumab for the treatment of metastatic colorectal cancer after first-line chemotherapy (January 2012)** NICE TA242
Panitumumab (*Vectibix*[®]) monotherapy is **not** recommended for the treatment of patients with metastatic colorectal cancer that has progressed after first-line chemotherapy.
www.nice.org.uk/guidance/ta242
 - ▶ **Cetuximab and panitumumab for previously untreated metastatic colorectal cancer (updated September 2017)** NICE TA439
Panitumumab (*Vectibix*[®]) is recommended, within its marketing authorisation, as an option for previously untreated RAS wild-type metastatic colorectal cancer in adults in combination with:
 - 5-fluorouracil, folinic acid and oxaliplatin (FOLFOX), or
 - 5-fluorouracil, folinic acid and irinotecan (FOLFIRI).

This advice is contingent upon the manufacturer providing panitumumab with the discount agreed in the patient access scheme.

www.nice.org.uk/guidance/ta439

- **MEDICINAL FORMS** There can be variation in the licensing of different medicines containing the same drug.
- Solution for infusion**
ELECTROLYTES: May contain Sodium
- ▶ **Vectibix** (Amgen Ltd)
 - **Panitumumab 20 mg per 1 ml** Vectibix 400mg/20ml concentrate for solution for infusion vials | 1 vial [POM] £1,517.16 (Hospital only)
 - **Vectibix 100mg/5ml** concentrate for solution for infusion vials | 1 vial [POM] £379.29 (Hospital only)

Pembrolizumab

09-Mar-2020

- **DRUG ACTION** Pembrolizumab is a monoclonal antibody, which binds to the programmed death-1 (PD-1) receptor, thereby potentiating an immune response to tumour cells.
- **INDICATIONS AND DOSE**

Melanoma (specialist use only) | Non-small cell lung cancer (as monotherapy) (specialist use only) | Urothelial carcinoma (specialist use only) | Classical Hodgkin lymphoma (specialist use only) | Head and neck squamous cell carcinoma (specialist use only)

 - ▶ **BY INTRAVENOUS INFUSION**
 - ▶ **Adult:** 200 mg every 3 weeks, alternatively 400 mg every 6 weeks, for dose adjustments due to side-effects or infusion-related reactions—consult product literature

Non-small cell lung cancer (as combination therapy) (specialist use only)

 - ▶ **BY INTRAVENOUS INFUSION**
 - ▶ **Adult:** 200 mg every 3 weeks, for dose adjustments due to side-effects or infusion-related reactions—consult product literature

IMPORTANT SAFETY INFORMATION

MHRA/CHM ADVICE: PEMBROLIZUMAB (*KEYTRUDA*[®]): REPORTS OF ORGAN TRANSPLANT REJECTION (JULY 2017)
A European review of worldwide data concluded that pembrolizumab may increase the risk of rejection in organ transplant recipients. The MHRA recommends considering the benefit of treatment with pembrolizumab versus the risk of possible organ transplant rejection for each patient.

- **CAUTIONS** Patients may need pretreatment to minimise the development of adverse reactions (consult product literature)
- **INTERACTIONS** → Appendix 1: monoclonal antibodies
- **SIDE-EFFECTS**
 - ▶ **Common or very common** Abdominal pain · anaemia · appetite decreased · arthralgia · arthritis · asthenia · chills · constipation · cough · cytokine release syndrome · diarrhoea · dizziness · dry mouth · dyspnoea · fever · gastrointestinal disorders · headache · hypersensitivity · hyperthyroidism · hypothyroidism · influenza like illness · infusion related reaction · myositis · nausea · oedema · pain · pneumonitis · severe cutaneous adverse reactions (SCARs) · skin reactions · taste altered · vomiting
 - ▶ **Uncommon** Adrenal insufficiency · alopecia · decreased leucocytes · dry eye · electrolyte imbalance · eosinophilia · epilepsy · hair colour changes · hepatitis · hypertension · hypophosphitis · insomnia · lethargy · myocarditis · nephritis · nerve disorders · neutropenia · pancreatitis · tenosynovitis · thrombocytopenia · thyroiditis · type 1 diabetes mellitus · uveitis
 - ▶ **Rare or very rare** Erythema nodosum · haemolytic anaemia · myasthenic syndrome · sarcoidosis