East Surrey CCG, Guildford & Waverley CCG, North West Surrey CCG, Surrey Downs CCG, Surrey Heath CCG, Crawley CCG, Horsham & Mid-Sussex CCG

Briefing Paper for Prescribing Clinical Network on NICE Technology Appraisal TA599

NICE TA Guidance	Sodium zirconium cyclosilicate for treating hyperkalaemia
Date of issue	04 September 2019
Available at	https://www.nice.org.uk/guidance/ta599

Medicine details	
Name, brand name	Sodium zirconium cyclosilicate, Lokelma®
Manufacturer	AstraZeneca
Licensed indication	Treatment of hyperkalaemia. The drug is a non-absorbed cation-exchange compound that acts as a selective potassium binder in the gastro-intestinal tract.
Formulation	Oral powder sachets - dissolve or mix with water before drinking
NICE recommended dosage/schedule	Initially 10 g 3 times a day, for up to 72 hours, followed by maintenance 5 g once daily, adjusted according to serum-potassium concentrations. The usual maintenance dose range is 5 g once every other day to 10 g once daily.

Disease and potential patient group	
Brief description of disease	Hyperkalaemia is a high level of potassium in the blood. High potassium levels cause reduced muscle activity, including heart muscle activity, which can be life threatening.
Potential patient numbers per 100,000	The prevalence of hyperkalaemia in the general population is unknown, but it is observed to occur in 1-10% of people admitted to hospital[1]. People with chronic kidney disease (CKD), chronic heart failure (CHF), diabetes, and hypertension are at an increased risk of developing hyperkalaemia when compared with the general population. Patients in the NHS with serum potassium levels above the normal range do not always need treatment to lower potassium. Once a diagnosis of hyperkalaemia is confirmed, the decision to use a treatment that actively lowers serum potassium takes into account whether the hyperkalaemia is life threatening. This is based on whether the rise in serum potassium is acute and whether there are characteristic electrocardiogram (ECG) changes.

SUMMARY

Guidance
Sodium zirconium cyclosilicate is recommended as an option for treating hyperkalaemia in adults only if used: • in emergency care for acute life-threatening hyperkalaemia alongside standard care or

- in outpatient care for people with persistent hyperkalaemia and chronic kidney disease stage 3b to 5 or heart failure, if they:
    - have a confirmed serum potassium level of at least 6.0 mmol/litre and
    - are not taking an optimised dosage of renin-angiotensin-aldosterone system (RAAS) inhibitor because of hyperkalaemia and
    - are not on dialysis.

Cost implications

Cost:
NB: NICE TA, therefore funding is mandatory.
The list price of sodium zirconium cyclosilicate is £14.24 per 10-g sachet or £7.12 per 5-g sachet (Specialist Pharmacy Service, June 2019).

Cost-effectiveness estimates (extract from NICE)

Emergency care: The committee concluded that it could recommend sodium zirconium cyclosilicate alongside standard care as an option for people needing treatment for acute hyperkalaemia in emergency care.

Outpatient care: The company's revised base-case incremental cost-effectiveness ratios (ICERs), which included a confidential discount for sodium zirconium cyclosilicate, were less than £20,000 per QALY gained compared with standard care for people with hyperkalaemia who have either chronic kidney disease or heart failure. The exact ICERs cannot be reported here because they are considered confidential by the company. The committee noted that the company's base case included an association between serum potassium levels and mortality, which the committee did not accept. However, in the scenario removing this association, the ICERs were also below £20,000 per QALY gained. Therefore, the committee concluded that sodium zirconium cyclosilicate was a cost-effective use of NHS resources for treating chronic hyperkalaemia in outpatient care.

Availability of PAS and details (if appropriate):
The manufacturer has a patient access scheme for sodium zirconium cyclosilicate, making the drug available to the NHS with a discount. It is only recommended if the company (Astra Zeneca) provides it according to the commercial arrangement.

Availability of homecare service (if appropriate):
Not required.

Alternative treatments and cost per patient per year

Emergency care: Current guidelines include the following treatments:
- Calcium chloride or calcium gluconate intravenously to protect the heart if there is ECG evidence of hyperkalaemia.
- Insulin and glucose intravenously to move potassium from the blood into cells.
- Nebulised salbutamol as an adjunctive therapy to insulin and glucose for serum potassium levels of 6.5 mmol/litre and above to move potassium from the blood into cells.
- After severe hyperkalaemia has resolved, potassium-binding agents may be offered for 3 or more days (namely, calcium resonium given orally) to remove potassium from the body.
- Stopping or reducing RAAS inhibitors, which can increase serum potassium levels.

Outpatient care:
- Advising people with chronic kidney disease to avoid foods high in potassium.
- Stopping or reducing RAAS inhibitors and potassium-sparing diuretics.
- Avoiding non-steroidal anti-inflammatory drugs and trimethoprim.

Impact to patients

An additional treatment option for patients

Impact to primary care

- This is not a PbRe drug, it is included in the national tariff.
- There should be no prescribing in primary care. The PAS price is only available in secondary care.
- Primary care prescribers should be aware that their patient is receiving sodium zirconium cyclosilicate and ensure that this is recorded in the patient's notes in order to be alert to potential side-effects and interactions with other medicines prescribed in primary care. This will ensure that GP records, which are accessed by other healthcare providers, are a true and accurate reflection of the patient's medication.

Impact to secondary care

- The initiation, administration and on-going treatment is managed by secondary care.
- The PAS scheme discounted price is only available to secondary care providers.
- All prescribing is recommended to be retained by secondary care.
- Sodium zirconium cyclosilicate does not have an immediate action: it starts reducing serum potassium concentrations as soon as 1 hour after ingestion and normokalaemia can be achieved typically within 24 to 48 hours. Provider organisations should therefore update their pathways for emergency hyperkalaemia
- Monitoring of the patient's renal profile must also be carried out by the secondary care specialist, and it is not expected that primary care will be asked to do this.
- Any specialist starting sodium zirconium cyclosilicate must write to the patient's GP to inform them that it is being prescribed within secondary care so that this can be recorded on the primary care clinical system.
- This TA is likely to have a significant cost impact to the renal unit at St Helier.

Impact to CCGs

- The technology is not commissioned by Clinical Commissioning Groups (CCGs).
- Providers are NHS hospital trusts.

Implementation

NICE TA implementation must be within 90 days from publication (4th September 2019)

Recommendation to PCN

PbRe – No. It is included in the national tariff

APC to consider **RED** Traffic Light Status.

References:

1. Paice B, Gray JM, McBride D et al. Hyperkalaemia in patients in hospital. Br Med J (Clin Res Ed) 1983; 286:1189–92.
2. Summary of Product Characteristics: Lokelma 10g powder for suspension. Accessed 29th October 2019. www.medicines.org
3. National Institute for Health and Care Excellence. Technology Appraisal 599: Sodium zirconium cyclosilicate for treating hyperkalaemia, 04 September 2019. Accessed 29th October 2019. www.nice.org.uk

Please provide Declarations of Interest (in last 12 months) for Author and contributors of this document. Please mark NULL if there are none.

Declaration of interest										
Date reported	Type of potential or actual conflict of interest (use a separate line for each entry if more than one)	Name of company	Drug / drug group	Your name	Your organisation (who are you representing)	Member of APC	Member of MCG	Date of interest (month)	Date of interest (year)	One off interest or on-going?
14/11/19	None			Arjun Odedra (GPST)	GWCCG	No	No			
14/11/19	None			Rachel Mackay	GWCCG	Yes	Yes			
15/11/19	None			Carina Joanes	SDCCG	No	No			

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VERSION CONTROL SHEET

Version	Date	Author	Status	Comment
V1.1	29/10/19	Arjun Odedra	Draft	
V1.2	11/11/19	Arjun Odedra	Draft	
V1.3	14/11/19	Arjun Odedra / Rachel Mackay	Final draft for consultation	Impact to primary, secondary and CCG added and recommendation to APC
V1.4	15/11/19	Arjun Odedra / Rachel Mackay	Final draft for consultation	Peer review by Carina Joanes prior to consultation. Addition of the following line under implications to secondary care: • Sodium zirconium cyclosilicate does not have an immediate action: it starts reducing serum potassium concentrations as soon as 1 hour after ingestion and normokalaemia can be achieved typically within 24 to 48 hours. Provider organisations should therefore update their pathways for emergency hyperkalaemia
V1.5	18/11/19	Arjun Odedra / Rachel Mackay	Final draft for consultation	Rachel Mackay - Addition of the following line under implications to secondary care: • This TA is likely to have a significant cost impact to the renal unit at St Helier.
V1.6	26/11/19	Arjun Odedra / Rachel Mackay / Carina Joanes	Final version for APC meeting on 4/12/19	Updated to include comments received during consultation process.