BNSSG Shared Care Guidance

Section 1: Drug Information

Drug	(Dopamine Agonists) Cabergoline, Bromocriptine Quinagolide (second line if Bromocriptine and Cabergoline) ineffective, contraindicated or intolerant
Amber *three months*	
Indication	Licensed indications: Hyperprolactinaemic disorders Unlicensed indication: Non-functioning pituitary adenomas, Acromegaly

Section 2: Treatment Schedule

Usual dose and frequency of administration	Secondary care is responsible for Dopamine Agonists dose and titration. **Cabergoline:** Adult dosage and administration: - Initially 250 or 500micrograms weekly (usually as 250micrograms twice weekly). - Increased in steps of 500micrograms every 1 month until optimal therapeutic response is achieved (increase dose following monthly monitoring of serum prolactin levels). - The usual dose is 0.25mg – 2mg weekly, usually 1 mg weekly. - Doses over 1mg weekly to be given as a divided dose - Maximum dose 4.5mg per week. - Aim to use the lowest dose of cabergoline necessary to lower prolactin level to normal. **Bromocriptine:** Adult dosage and administration: - Initially 1.25mg daily, dose to be taken at bedtime - Increased to 1.25mg twice daily after 1 week

	- Increase in steps of 1.25mg every month until optimal therapeutic response is achieved (increase dose following monthly monitoring of serum prolactin levels). - The usual dose is 1.25-2.5mg twice daily. - Maximum dose 30mg per day, but doses over 7.5mg / day are rarely needed. - Aim to use the lowest dose of bromocriptine necessary to lower prolactin level to normal. **Quinagolide:** Adult dosage and administration - Initially 25 micrograms once daily for 3 days, dose to be taken at bedtime; - increased in steps of 25 micrograms every 3 days. - Usual dose 75–150 micrograms daily taken at bedtime. - For doses higher than 300 micrograms daily increase in steps of 75–150 micrograms at intervals of not less than 4 weeks
Route and formulation	By mouth Tablets
Duration of treatment	For patients with normal serum prolactin levels and no visible tumour remnant on MRI, dopamine agonist therapy may be tapered and discontinued after 2 years of treatment. Prolactin levels will be monitored at 3 months and annually after that. Annual monitoring to be done in primary care. Long term treatment may be required in patients with macroprolactinemia or on the decision of secondary care.

Section 3: Monitoring

Below are details of any tests that are required before or during treatment, including frequency, responsibilities cause for adjustment and when it is required to refer to the specialist.

Baseline tests - where appropriate

Initiation and baseline monitoring to be requested by the specialist at the first clinic appointment:

- Baseline prolactin level
- Blood pressure
- Baseline transthoracic echocardiogram
- Pituitary MRI
- Renal function
- Liver function

Subsequent tests - where appropriate (Please note who takes responsibility for taking bloods and interpreting results)

Test	Frequency	Who by	Action/management
Prolactin Level	Repeat prolactin levels and dose titration until stable	Secondary Care	Dose to be adjusted according to prolactin levels
	1. Once every 12 months, and; 2. after any change in dose of dopamine agonist	Primary Care	Blood test to be done in primary care as per secondary care request and dose to be adjusted as per level and communicated to Primary care via clinic letter/email for prescription amendment.
Blood pressure	After any dose adjustment	Primary Care	Consultant to write to GP about any dose change. If patient reports hypotensive symptoms, GP to discuss with endocrinologist regarding the dose titration
Transthoracic echocardiogram	At baseline and after 5 years if Cabergoline total weekly dose is ≤2mg, or annually if	Secondary care	A standard transthoracic echocardiogram should be performed before a patient starts DA therapy for hyperprolactinaemia.

	cabergoline dose is >2mg/week.		Repeat transthoracic echocardiography should then be performed at 5 years after starting cabergoline in patients taking a total weekly dose less than or equal to 2 mg. If there has been no change on the 5-year scan, repeat echocardiography, could continue at 5-yearly intervals
Repeat Pituitary MRI Scan	6 to 12 months after initiating therapy	Secondary Care	Only for patients with macroprolactinomas

Section 4: Side Effects

The most pertinent side effects and management are listed below. For everything else, please see BNF or SPC.

Side effects and management

Side effect	Frequency/severity	Action/management
CVS- (Hypotension, Angina Pectoris, Valvopathy- Common for cabergoline in higher doses for other indications e.g., Parkinson's) CNS (Headache, Dizziness, Drowsiness, Confusion, Syncope) Psychological (Hallucination, Insomnia, Impulse	Common	If symptoms are moderate to severe, contact secondary care for advice as may need to stop, change or switch medication.

	control disorder) G.I. (Constipation, Abdominal pain, Nausea, Gastritis, Vomiting, Diarrhoea) Other- Nasal congestion, Dyspnoea		
	Acute Psychosis, Digital Vasospasm, Epistaxis, Hot Flushes, Muscle weakness, Fibrosis, Arrythmia, Dyspnoea, GI Haemorrhage, Neuroleptic malignant syndrome, Pericardial effusion, Pericarditis, Sudden onset of sleep, Vision disorders, Tinnitus	Rare	Contact secondary care for advice.
Referral back to specialist	Routine review with specialist every 12 months. Please contact secondary care if the patient is intolerant of dopamine agonist therapy or develops side effects. Please contact secondary care if the prolactin level remains elevated or starts to rise.		

Section 5: Other Issues

(e.g. Drug Interactions, Contra-indications, Cautions, Special Recommendations)

For full list please see BNF or SPC

Issues	**Significant Drug Interactions** • *Antibacterials*: plasma concentration of cabergoline increased by macrolides (increased risk of toxicity) • *Alcohol*: Increased risk of hypotension with Cabergoline, Quinagolide and Bromocriptine • *Antipsychotics*: hypoprolactinaemic effects of cabergoline, Bromocriptine and Quinagolide antagonised by antipsychotics • *Domperidone*: hypoprolactinaemic effect of cabergoline and bromocriptine possibly antagonised by domperidone. • *Memantine*: effects of dopaminergics possibly enhanced by memantine. • *Metoclopramide*: hypoprolactinaemic effect of cabergoline, bromocriptine and quinagolide antagonised by metoclopramide • *Blood pressure lowering agents*: May enhance hypotensive effects with dopamine agonist. **Contra-indications:** 1. Hypersensitivity to dopamine agonists 2. History of pulmonary, pericardial and retroperitoneal fibrotic disorders 3. Evidence of cardiac valvopathy as determined by pre-treatment echocardiography. 4. Avoid in pre-eclampsia. 5. History of puerperal psychosis in women 6. To avoid Quinagolide in hepatic and renal impairment **Cautions:** 1. History of peptic ulcers 2. Raynaud's syndrome 3. Cardiovascular disease 4. Concomitant use with psychoactive medication and / or history of mental health disorders 5. Acute porphyria

	6. Concomitant use with antihypertensives due to risk of postural hypotension post dose 7. CNS depression causing impaired physical and mental activities (Patient should be cautioned about operating machinery and driving) **8.** Monitor for development of impulse control disorders.
Reminder to ask patient about specific problems	The development of urges or cravings suggesting the development of impulse control disorders. For example, gambling, excessive spending or eating, an increase in sexual thoughts or an abnormally high sex drive.

Section 6: Advice to the patient

Advice for prescribing clinician to inform patient.

1. To stop taking dopamine agonist if they become pregnant and to inform GP or specialist.
2. Prescriptions for dopamine agonists will now be provided by your GP and local pharmacy. Please ensure you order new prescriptions with enough time for a new supply.
3. If the dopamine agonist is stopped for any reason, please ensure you speak to your GP or specialist for specific advice.

Section 7: Generic principles of shared care for SECONDARY CARE

Core responsibilities

1. Initiating treatment and prescribing for the length of time specified in **section 1.**
2. Undertaking the clinical assessment and monitoring for the length of time specified in **section 1** and thereafter undertaking any ongoing monitoring as detailed in **section 3.**
3. Communicate details of the above in 1 and 2 to GP within the first month of treatment. This information should be transferred in a timely manner.
4. Refer patients to GP and provide information of further action where appropriate e.g., if blood test is due.
5. To provide advice to primary care when appropriate.
6. Review concurrent medications for potential interaction prior to initiation of drug specified in **section 1.**
7. Stopping treatment where appropriate or providing advice on when to stop.
8. Reporting adverse events to the MHRA.
9. Reminder to ask patients about problems see **section 5.**

Section 8: Generic principles of shared care for PRIMARY CARE

Core responsibilities

1. Responsible for taking over prescribing after the length of time specified in **section 1.**
2. Responsible for any clinical assessment and monitoring if detailed in **section 3** after the length of time specified in **section 1.**
3. Review of any new concurrent medications for potential interactions.
4. Reporting adverse events to the MHRA.
5. Refer for advice to specialist where appropriate.
6. Reminder to ask patients about problems see **section 5.**

Section 9: Contact Details

Name	Organisation	Telephone Number	E mail address
Fong Chau Consultant Endocrinologist	NBT	01174146419	fong.chau@nbt.nhs.uk
Dr Faisal Hasan	NBT	01174146419	Faisal.Hasan@nbt.nhs.uk
Dr Karin Bradley	UHBW	01173423082	Karin.Bradley@uhbw.nhs.uk

Section 10: Document Details

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Section 11: Collaboration

All shared care protocols should be BNSSG wide where possible. Specialists in any one discipline are encouraged to collaborate across the health community in preparing shared care guidance. Please give details.

1. As contacts

Section 12: References

1. Cabergoline (Dostinex). Summary of Product Characteristics. April 2016. Available at http://www.medicines.org.uk/emc/medicine/10003#PHARMACODYNAMIC_PROPS. Accessed on 09/07/2024
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4. British National Formularly. 29 May 2024. Available at www.bnf.org. Accessed 09/07/2024
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6. MHRA Drug Safety Update. Ergot-derived dopamine agonists: risk of fibrotic reactions. October 2008. Available at https://www.gov.uk/drug-safety-update/ergot-derived-dopamine-agonists-risk-of-fibrotic-reactions Accessed on 09/07/2024
7. Steeds R, Stiles C, Sharma V,Chambers J, Lloyd G, Drake W. Echocardiography and monitoring patients receiving dopamine agonist therapy for hyperprolactinaemia: A joint position statement of the British.Society of Echocardiography, the British Heart Valve Society and the Society for Endocrinology. Clin Endocrinol (Oxf). 2019;90:662–669. https://doi.org/10.1111/cen.13940