

Cytisine tablets to aid smoking cessation

The Cheshire and Merseyside Area Prescribing Group recommends the prescribing of cytisine tablets to aid smoking cessation.

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Cytisine is recommended within its licensed indication¹, to aid smoking cessation.

Cytisine is a 25-day course, where smoking should be stopped on no later than day 5 of the course.^{1,2} Cytisine is not recommended for use in patients under the age of 18 years old or over 65 years of age.¹

Cytisine is referred to as cytisinicline in the BNF.²

A NICE surveillance report from February 2024³ recommended that cytisine should be considered as another intervention for smoking cessation.³

The National Centre for Smoking Cessation and Training (NCSCT) issued a summary relating to the usage of cytisine in March 2024 to support prescribers and also provide the Summary of Product Characteristics.⁴

Implementation notes

- > Cytisine can be initiated in either primary care or secondary care.
- > The full course should be supplied to the patient upon initiation. The patient can be directed to a local smoking cessation service if further support is needed during this period.
- > Patients should be counselled upon the importance of stopping smoking no later than day 5 of treatment and the associated adverse effects that may occur if smoking or use of other nicotine products is continued throughout the course. See **Patient factors** section.
- > Counselling about risk of suicidal ideation and depressed mood as a symptom of nicotine withdrawal.
- > Cytisine should not be used during pregnancy. It is recommended that those of childbearing potential use effective contraception while taking cytisine, as there is no data on its safety in pregnancy.⁵
- > The effect of cytisine on hormonal contraception is unknown and so additional barrier methods are recommended in those using any form of hormonal contraception.¹
- > It is the responsibility of the initiating prescriber to ensure that the patient is aware of the need to use additional barrier methods in addition to systemic hormonal contraception, prior to commencing treatment and is counselled appropriately. Confirmation that benefits, risks and contraception have been discussed and details of any action taken should be provided to primary care.

Note: Patients who are not eligible for treatment under this statement may be considered on an individual basis where their GP or consultant believes exceptional circumstances exist that warrant deviation from the rule of this policy. In this situation, follow locally defined processes.

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Effectiveness^{1,2}

Mechanism of Action

Cytisine is a plant alkaloid that resembles nicotine. Cytisine is a nicotine-receptor partial agonist that competes with nicotine for the same receptors, gradually displaces nicotine due to its stronger binding and has a lower ability to stimulate nicotine receptors.

Evidence⁶

A Cochrane systemic review reviewed randomised control trials that compared the treatment drug with placebo, another smoking cessation drug, e-cigarettes or no medication. 75 trials of 45,049 people were included in the review. It was found with moderate-certainty evidence (limited by heterogeneity) that cytisine helps more people to quit smoking than placebo (RR 1.30, 95% confidence interval (CI) 1.15 to 1.47; $I^2 = 83%$ (4 studies, 4623 participants) and no evidence of a difference in the number of reporting serious adverse effects (RR 1.04, 95% CI 0.78 to 1.37; $I^2 = 0%$ (3 studies, 3781 participants- low-certainty evidence).

Safety^{1,2}

Contraindications

- Hypersensitivity to the active substance or to any of the excipients (see SPC for full list of excipients)¹
- Unstable angina
- A history of recent myocardial infarction
- Clinically significant arrhythmias
- A history of recent stroke
- Pregnancy and breastfeeding

Special Warnings and Precautions for use

- Stopping smoking: Polycyclic aromatic hydrocarbons in tobacco smoke induce the metabolism of drugs metabolised by CYP 1A2 (and possibly by CYP 1A1). When a smoker stops, this may result in slower metabolism and a consequent rise in blood levels of such drugs. This is of importance with narrow therapeutic window products .e.g. theophylline, clozapine and ropinirole. The plasma concentration of other medicinal products metabolised in part by CYP 1A2 .e.g. imipramine, olanzapine, clomipramine and fluvoxamine may also increase on cessation of smoking, although data to support this are lacking and the possible clinical significance of this effect for these drugs is unknown. Limited data indicate that the metabolism of flecainide and pentazocine may also be induced by smoking.
- Depressed mood, rarely including suicidal ideation and suicide attempt, may be a symptom of nicotine withdrawal. Prescribers should be aware of possible emergence of serious neuropsychiatric symptoms in patients attempting to quit smoking with or without treatment.
- History of psychiatric disorders: Smoking cessation with or without pharmacotherapy has been associated with exacerbation of underlying psychiatric illness e.g. depression. Care should be taken with patients with a history of psychiatric illness and patients advised accordingly.
- Those of childbearing potential must use effective contraception while taking cytisine. An additional barrier method is recommended in those using any hormonal contraceptives as the effect of cytisine on hormonal contraception is unknown.⁵ See **Implementation notes**.

Side effects

- Very common and common side effects include anxiety, appetite change, concentration impaired, constipation, diarrhoea, dizziness, drowsiness, dry mouth, fatigue, gastrointestinal discomfort, headaches, hypertension, malaise, mood altered, myalgia, nausea, oral disorders, skin reactions, sleep disorders, tachycardia, taste altered, vomiting and weight increase.

Refer to product SmPC for complete list of contraindications, cautions, warnings and side effects.

Cost

The cost per treatment course (100 tablets for a 25 day course) is £115 per patient (excluding VAT).⁷

Patient factors

- There are no or limited amount of data from the use of cytisine in pregnancy therefore it is not recommended during pregnancy.¹

- Those of childbearing potential should use effective contraception while taking cytisine. An additional barrier method is recommended in those using any hormonal contraceptives as the effect of cytisine on hormonal contraception is unknown.⁵ See **Implementation notes**.
- Cytisine should be taken only by those with a serious intention of weaning off nicotine. If the patient continues to simultaneously use both cytisine and smoke (or use products containing nicotine) this can lead to aggravated adverse reactions of nicotine.
- Cytisine is not licensed for patients under the age of 18 years old or over 65 years of age.
- Cytisine should not be used with anti-tuberculosis drugs.

Prescribing information

The duration of therapy for cytisine is 25 days.

Cytisine should be taken according to the following schedule:

Days of Treatment	Recommended dosing	Maximum daily dose	Maximum number of tablets per day
Day 1 to Day 3	1.5mg every 2 hours	9mg	6
Day 4 to Day 12	1.5mg every 2.5 hours	7.5mg	5
Day 13-Day 16	1.5mg every 3 hours	6mg	4
Day 17- Day 20	1.5mg every 5 hours	4.5mg	3
Day 21-25	1.5mg-3mg daily	1.5-3mg	2

Smoking should be stopped no later than day 5. Smoking should not be continued during treatment as this may aggravate adverse reactions. In the case of treatment failure, the treatment should be discontinued and may be resumed after 2 to 3 months.

References

1. Consilient Health Limited. Summary of Product Characteristics; [Cytisine-1-5mg-uk-spc\(ncsct.co.uk\)](https://www.ncsct.co.uk/medicines/cytisine-1-5mg-uk-spc), 7th September 2022. Accessed 14 May 2024.
2. British National Formulary (2024) ([Cytisinicline](#)) Accessed 17 May 2024
3. National Institute for Health and Care Excellence. NICE Surveillance Report: [2024 exceptional surveillance of tobacco: preventing uptake, promoting quitting and treating dependence \(NICE guideline NG209\)](#). Accessed 17 May 2024
4. National Centre for Smoking Cessation and Training. [Cytisine](#): Summary and dosing guide and Summary of Product Characteristics. Accessed 17 May 2024.
5. Consilient Health Limited. Patient information leaflet, [Cytisine 1.5 mg tablets](#), October 2023. Accessed 19 September 2024.
6. Livingstone-Banks et al. [Nicotine receptor partial agonists for smoking cessation. Cochrane Library](#). Published 28 June 2023. Accessed 20 August 2024.
7. NHS Business Services Authority. [Cytisine 1.5mg tablets- dm+d browser \(nhsbsa.nhs.uk\)](#) Accessed 20 August 2024.