

Clomipramine and brain tumours

Clomipramine is a drug that has been used to treat depression since the 1960s. Over the past few years there has been debate about using clomipramine to treat brain tumours.

While there's some anecdotal evidence (personal stories) about its treatment of brain tumours, there have been no clinical trials to prove or disprove its effectiveness.

Anecdotal evidence doesn't necessarily show what a typical experience of using the drug would be. This can only be done using a clinical trial. Without this, it's impossible to know if clomipramine really does have an effect.

This fact sheet outlines some of the research and theories about clomipramine.

In this fact sheet:

- What is clomipramine?
- How is clomipramine thought to work?
- Clomipramine – the debate
- Things to consider before taking clomipramine
 - side-effects
 - when you should NOT take clomipramine.

What is clomipramine?

Clomipramine is a type of medicine that acts on the nerve cells in the brain. It prevents the neurotransmitters, called serotonin and noradrenaline, from being re-absorbed back into the brain. This helps the feel-good effect of these chemicals last longer and so helps treat depression.

(Neurotransmitters are the chemicals that transmit signals in the brain.)

How is clomipramine thought to work?

Studies carried out in laboratories looked at how clomipramine affects the way cells use glucose (sugar) to grow and divide, leading to an increase in number and the growth of a tumour. This process is called cellular respiration.

Clomipramine is thought to stop cellular respiration and therefore stop cells dividing. This would slow or stop the rapid increase in the number of cells that happens in tumours and cause the cells to die.

In further studies on rats, clomipramine has been shown to cause cell death in a chemotherapy-resistant glioma, when combined with other drugs, by both stopping cell growth and causing cell death.

Clomipramine – the debate

While there's been some laboratory research into clomipramine and its effect on brain tumour cells, there hasn't been a randomised clinical trial showing if the drug is effective in treating brain tumours.

For further information about clinical trials, see the *Clinical trials* webpage and fact sheet.

Without this evidence, clomipramine won't be approved for the treatment of brain tumours and uncertainty about its effectiveness will remain.

The debate comes from some stories of real people with gliomas who appeared to have a good response after taking clomipramine. However, this anecdotal evidence is not usually accepted as scientific evidence.

Without a clinical trial, it's not possible to tell whether any improvements are because of clomipramine or for other factors. For example, clomipramine is sometimes taken alongside other medicines, so it could be these, or a combination of the other medication and clomipramine, that explains the effect.

However, it's proved difficult to run a clinical trial. In a clinical trial, some patients would receive clomipramine, while others would not, so that a comparison of its effectiveness could be made.

As clomipramine is readily available in the UK as a treatment for depression, people are unlikely to enter a trial where there's a chance they'll not receive the drug when they can already access it relatively easily through the NHS. This can prevent people from volunteering to take part in such a trial .

In summary, this initial research may prove useful in the development of future treatments, but it's important to note that:

- no clinical trials have looked at whether the result found in the laboratory could be repeated in people
- no research has been done into what dosages would be needed in people
- not all laboratory results prove successful or safe when administered to people during clinical trials.

In addition, the organisation which provides guidance for healthcare professionals about managing conditions and medicines (NICE), recommends clomipramine only for the following conditions: Depression, Obsessive Compulsive Disorder (OCD) and Body Dysmorphic Disorder (BDD).

There are no NICE guidelines at present for the use of clomipramine in the treatment of glioma.

Therefore, your doctor may be unwilling to prescribe this drug.

Things to consider before taking clomipramine

Common side-effects

As with all drugs, clomipramine can have some unwanted side-effects and these may be different from person to person. These side-effects usually improve as your body adjusts to the medicine.

However, it's important to read the literature that comes with all medication and talk to your doctor if you feel unwell or if the side-effects do not improve.

Common side-effects include:

- abdominal pain
- fatigue
- impaired memory
- diarrhoea
- hot flushes
- muscle spasms or weakness
- restlessness.

Other side-effects may include:

- dry mouth
- constipation
- feeling or being sick
- dizziness
- feeling like you have a fast heartbeat or feeling panicky
- difficulty passing urine
- skin rashes
- confusion.

You may also experience some side-effects when you stop taking clomipramine. These include:

- headaches
- flu-like symptoms
- sleep disturbance
- feeling shaky.

Contra-indications (when you should not take clomipramine)

Some people must NOT take clomipramine.

You need to talk to your doctor if you:

- have ever had an allergic reaction to any other anti-depressants
- have had a heart attack in the last 3 months
- have heart or liver disease
- have had any mental illness other than depression
- are on other medicines, e.g. carbamazepine or phenytoin (for epilepsy).

What if I have further questions or need other support?

You can contact our Information and Support Team in the following ways:



0808 800 0004

(Free from landlines and most mobiles:
3, O2, EE, Virgin and Vodafone)



support@thebraintumourcharity.org



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Get in touch with us online via
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About this information resource

The Brain Tumour Charity is proud to have been certified as a provider of high quality health and social care information by The Information Standard - an NHS standard that allows the public to identify reliable and trustworthy sources of information.

Written and edited by our Information and Support Team, the accuracy of medical information in this resource has been verified by leading health professionals specialising in neuro-oncology.

Our information resources have been produced with the assistance of patient and carer representatives and up-to-date, reliable sources of evidence.

We hope that this information will complement the medical advice you've already been given. Please do continue to talk to your medical team if you're worried about any medical issues.

If you'd like a list of references for any of our information resources, or would like more information about how we produce them, please contact us.

We welcome your comments on this information resource, so we can improve. Please give us your feedback via our Information and Support Team on **0808 800 0004** or **support@thebraintumourcharity.org**

About The Brain Tumour Charity

The Brain Tumour Charity is at the forefront of the fight to defeat brain tumours and is the only national charity making a difference every day to the lives of people with a brain tumour and their families. We fund pioneering research worldwide, raise awareness of the symptoms and effects of brain tumours and provide support for everyone affected to improve quality of life.

We wouldn't be able to make the progress we have without the incredible input we receive from you, our community.

Whether it's reviewing our information resources, campaigning for change, reviewing research proposals or attending cheque presentations, everything you do helps to make a difference.

To find out more about the different ways you can get involved, please visit thebraintumourcharity.org/volunteering

We rely 100% on charitable donations to fund our work.

If you would like to make a donation, or find out more about other ways to support us, including leaving a gift in your Will or fundraising through an event, please get in touch:

Visit

thebraintumourcharity.org/get-involved
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fundraising@thebraintumourcharity.org



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