

Clomipramine

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

While there is some anecdotal evidence for the treatment of brain tumours, there have been no clinical trials to prove or disprove its effectiveness.

[Anecdotal evidence is not necessarily representative of a ‘typical’ experience and only statistical evidence can determine how typical something is. It is therefore impossible, without a clinical trial, 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?
- Clomipramine - the debate
- How is Clomipramine thought to work?
- NICE guidelines for Clomipramine
- Common side effects of Clomipramine

What is Clomipramine?

Clomipramine is a type of medicine called a tricyclic antidepressant (TCA). This means it is a medicine that acts on the nerve cells of the brain. It acts by preventing the neurotransmitters (chemicals that transmit signals in the brain) serotonin and noradrenaline, from being re-absorbed back into the brain. By doing this, it helps prolong the feel good effect that these chemicals normally give us.

Clomipramine - the debate

While there has been some laboratory research into Clomipramine and its effect on brain tumour cells, there has not been a randomised clinical trial (for further information see the clinical trials fact sheet) showing if the drug is effective in treating brain tumours.

Without this evidence, Clomipramine will not be approved for the treatment of brain tumours and uncertainty regarding its effectiveness will remain. The debate on Clomipramine arises as there is some anecdotal evidence about Clomipramine being effective to treat glioma. The term 'anecdotal evidence' refers to evidence gathered from the stories of real people. However, this sort of evidence is considered scientifically unconvincing and is not usually accepted as scientific evidence.

The difficulty with Clomipramine arises because, without a trial, it is not possible to tell whether any improvements result from Clomipramine or for other reasons. For example, Clomipramine is sometimes taken alongside other medicines, so it could be this, or a combination of the other medication and Clomipramine, that explains the effect.

To scientifically establish whether Clomipramine is an effective treatment for brain tumours, a randomised clinical trial is needed. This means that some of the patients in the trial would receive Clomipramine while others would not. The reason for this is to allow a comparison of the outcomes for the two groups to be made.

A key barrier preventing people from volunteering to participate in such a trial is that Clomipramine is readily available in the UK as a treatment for depression. People are therefore unlikely to enter a trial where there is chance they will not receive the drug when they can already access it relatively easily through the NHS.

How is Clomipramine thought to work?

As stated, while there has been some laboratory research conducted into Clomipramine and its use with brain tumours, no clinical trials have been undertaken to look at whether these laboratory results translate into humans and what levels of dosages would be needed if the results did translate. At present, research carried out on Clomipramine and brain tumours has looked at its effect on cells at a molecular level.

Studies carried out in laboratories focus on Clomipramine's effect on cellular respiration. Cellular respiration is the process that allows cells to use energy stored in glucose to trigger the process involved in cell production. Without cellular respiration, cells begin to die. Clomipramine is thought to stop cellular respiration.

Previous studies into cell reproduction have shown that stopping cellular respiration causes programmed cell death (PCD). PCD means the natural death of cells as opposed to an agent killing them. It is also known that a lack of PCD leads to uncontrolled rapid cell production, such as the type seen in cancer.

It has therefore been suggested that Clomipramine can trigger PCD by stopping cellular respiration. It is thought that by triggering PCD, Clomipramine may be able to slow or stop the continued rapid cell production that occurs in tumours. In essence, it is thought that Clomipramine may cause tumours to stop growing by preventing the process cells need to divide and causing cells to die.

In further studies on rats, Clomipramine has been shown to cause cell death in a chemotherapy resistant glioma (Rat C6 glioma) when combined with other drugs, by both stopping cell growth and causing cell death.

This initial research may prove useful in the development of future cancer treatments, but it is important to note that not all laboratory results prove successful or safe when administered to humans during clinical trials.

NICE guidelines for Clomipramine

NICE recommends Clomipramine for the following conditions: Depression, Obsessive Compulsive Disorder (OCD), Body Dysmorphic Disorder (BDD), antenatal and postnatal mental health and anxiety. There are no NICE guidelines at present for the use of Clomipramine in the treatment of glioma. Your doctor may therefore be unwilling to prescribe this drug.

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 is 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:

- Dry mouth
- Constipation
- Headaches
- Feeling faint or light headed
- Feeling or being sick
- Diarrhoea
- Feeling like you have a fast heartbeat or feeling panicky
- Feeling shaky
- Hot flushes
- Confusion
- Sleep disturbance
- Skin rashes
- Difficulty passing urine

Things you must consider before taking 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 three months
- have heart or liver disease
- have had any mental illness other than depression

Clomipramine also interferes with many other medicines, such as Carbamazepine or Phenytoin (for epilepsy). If you decide to take Clomipramine you must discuss this with your medical team.

What if I have further questions?

If you require further information, any clarification of information, or wish to discuss any concerns, please contact our Support and Information Team.

- Call 0808 800 0004 (free from landlines and most mobiles including 3, O2, EE, Virgin and Vodafone)
- Email support@thebraintumourcharity.org
- Join our online forums at www.thebraintumourcharity.org/forums

About us

The Brain Tumour Charity makes every effort to ensure that we provide accurate, up-to-date and unbiased facts about brain tumours. We hope that these will add to the medical advice you have already been given. Please do continue to talk to your doctor if you are worried about any medical issues.

We are the UK's leading brain tumour charity. We fund scientific and clinical research into brain tumours and offer information and support to those affected, whilst raising awareness and influencing policy.

We rely 100% on charitable donations to fund our vital work. If you would like to make a donation, or want to find out about other ways to support us including fundraising, leaving a gift in your will or giving in memory, please visit us at www.thebraintumourcharity.org or call 01252 749990.

About this fact sheet

This fact sheet has been written and edited by The Brain Tumour Charity's Support and Information Team. The accuracy of medical information has been verified by a leading neuro-oncologist. Our fact sheets have been produced with the assistance of patient and carer representatives and up-to-date, reliable sources of evidence. If you would like a list of references for any of the fact sheets, or would like more information about how we produce them, please contact us.

Clomipramine

Your notes



Hartshead House
61-65 Victoria Road
Farnborough
Hampshire
GU14 7PA
01252 749990
enquiries@thebraintumourcharity.org
www.thebraintumourcharity.org

© The Brain Tumour Charity 2014. Registered Charity Number 1150054 (England and Wales) and SC042096 (Scotland).

Version 2.0 (clear print), first produced in standard print format January 2013.
Review date, 2016.