

Outline and evaluate biological therapies as treatments of depression

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There many forms of treatment to cure depression, many of which are biological. These target the physical and chemical side of the body.

Anti-depressants and other drugs are the most common forms of treating depression. They work by boosting levels of insufficient neurotransmitters such as serotonin and nor-adrenaline. They will either reduce the amount of re-absorption or block the enzyme that is trying to break down neurotransmitters. Allowing to increase the amount of neurotransmitter available , so that neighbouring cells become excited.

Tricyclics are used to block the transporter mechanism that re-absorbs both serotonin and nor-adrenaline into the pre-synaptic cell after it has fired. As a result to this there are more neurotransmitters left in the synapse making the transmission of the next impulse easier.

The treatment of depression has three phases which it is to go through, the first being acute in which the treatment of current symptoms takes place. Then it goes into the continuation phase in which the treatment is continued for six months where the medication is gradually withdrawn to prevent relapse. Lastly the maintenance phase which is recommended for individuals who have a recurrent depressive episode.

One of the most common anti-depressant drugs used are Selective Serotonin Re-uptake Inhibitors (SSRI's), these are associated with serotonin which have been found to be involved in depression. The SSRI's will work by stopping the

nerve cells from re-absorbing serotonin that has been released into the synapse, which in turn will increase the amount of serotonin available.

However SSRI anti-depressants may not be able to treat all forms of depression. Kirsch et al (2008) found that only in the most severe cases of depression there was a significant advantage of using the SSRI. Therefore showing that anti-depressants may not be able to help those with mild or moderate depression.

Another type of anti-depressants are mono amine oxidase inhibitors (MAOIs) that work with nor-adrenaline in the synapses. These block the enzyme mono amine oxidase from taking apart noradrenaline, and thus increase the amount of noradrenaline that is available at the synapse. Low levels of noradrenaline in certain areas of the brain has been linked with depression, and so MAOIs are an effective antidepressant.

Nonetheless in the case of children and adolescents anti-depressants may fail to work altogether. Hammen (1997) found that anti-depressants appeared to be less useful with children and adolescents than with adults. This could be due to the fact that there are varied developmental differences in their brain neurochemistry and thus equating to children not being as effected by the anti-depressants. Which may mean that other forms of treatment may need to be considered when treating a depressed child but could and but could also question the overall effectiveness of anti-depressants.

There are also safety concerns to do with SSRI's such as an increased use of them may lead to an increase in suicidal thoughts within vulnerable people.

Ferguson et al (2005) did a review of studies that found that those in a SSRI condition compared to a placebo condition, are twice as more likely to attempt suicide.

This risk however has been found higher among adolescents than adults. Suggesting that anti-depressants may in fact be more harmful than beneficial to a depressive individual.

Another issue with the treatment of depression is that there may be a misdiagnosis in treatment due to age. Benek-Higgins et al (2008) found that because of the symptoms of depression are masked over by the natural changes in the elderly and their lifestyles. Therefore anti-depressant medication is less likely to be prescribed to them, which may lead to depression in the elderly not being treated at all.

It has been found to be harder to treat the elderly also, this is because they are less likely to seek professional help as they feel that there is a social stigma attached to being "mentally ill" and do not wish to lose their independence if they are diagnosed. This equals to them not being diagnosed and in turn equalling to them not being treated of their depression.

However using a placebo during an experimental treatment may be an ethical issue. As lying to a depressed individual, that they are taking medication to make them better could psychologically make them worse upon learning that they have been lied to. Therefore a thorough debriefing and regular follow-ups will be needed for the individuals.

There is also the risk of a publication bias, Turner et al (2008) found as authors have suggested that there is selective publication made to emphasise the positive outcomes of anti-depressant treatments. Drug companies may try to present their drugs as positive even if they aren't. Therefore biased conclusion may lead to inappropriate treatment decisions.

Many therapies such as drug therapy are conducted regularly to treat depression but there is no answer on how to measure the effectiveness of them. As how are we meant to know when the patient has been "cured", as there is no particular destination that one is trying to get towards. So there is no particular time to measure the effectiveness, whether that be during the therapy or 6 or so months after. Therefore the use of drugs etc may not be as effective as we think, because they do not lead us to a clear cure.

Electroconvulsive therapy (ECT) involves applying electrodes to a patient's head and passing an electric current through their brain. This will then cause a seizure to occur for a few seconds, but it is not clear as to why ECT works and how. Oxygen is given to the patient during the treatment to compensate for their inability to breathe, and the treatment will be given to the patient three times per week depending on the severity of their depression.

It is used in the most severe cases, where a patient is at danger of harming themselves or is extremely suicidal, and anti-depressants and therapy are not having any effect on the the patient. The seizure from the ECT is said to regulate the mood of the patients, which will decrease their depressive episode.

Yet there are many side effects to the use of ECT, for example when ECT was first introduced it resulted in injuries such as broken bones, however due to the modern change in treatment and the use of muscle relaxants and the therapy being taken place under anesthetic has decreased the likelihood of injuries. Although memory loss is very likely to follow prior to ECT, it isn't said how long the memory loss may last. Although ECT has been found to be effective to those who have depression the negatives may outweigh the positives to some extent.

There is much evidence that supports the effectiveness of ECT, for example Gregory et al (1985) found that in comparison to sham ECT , which is when the patient is not anaesthetised during ECT, have been found to have a significant difference in outcome in favour of the real ECT. Therefore showing that within ECT itself it may be very effective for people with depression.

In contrast to anti-depressants, ECT have been shown to be more efficient than anti-depressants, Scott (2004) found that in the short term treatment ECT was better than drug therapy. Which again supports the effectiveness of ECT and how it should be used more often.

One way of minimising the cognitive problems that are associated with ECT, which is to use unilateral ECT, where the electrodes are placed only on one side of the skull, rather than the bilateral ECT where the electrodes are placed on both sides of the skull. Studies found that the unilateral is less likely to cause cognitive problems than the bilateral. This shows that to use unilateral ECT would be much more effective than bilateral ECT, and could cause less side effects.

A concern with ECT is the consent of the patients receiving the treatment, the DOH report (1999) found that 59% of 700 patients whom had received ECT admitted to not giving consent to treatment. Even when the patients volunteer to reicieving the treatment there was still an issue with fully informed consent about the side effects. Therefore ECT may not be given to all patients with fully informed consent and could be seen as ethically incorrect.