

Lithium shows no benefit to MND patients

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(Medical Xpress)—Results from a clinical trial into amyotrophic lateral sclerosis (ALS), led by King's College London's Institute of Psychiatry show that lithium carbonate is ineffective at treating the disease.

ALS is a type of [motor neuron disease](#) (MND). It is a neurodegenerative disease in which motor neurons in the brain and spinal cord degenerate, resulting in progressive paralysis ultimately leading to dependence on mechanical [ventilator support](#) or death, usually within 3 years. A drug called riluzole is known to improve survival in patients with ALS, but the effect is moderate and there remains a pressing need for more effective treatments.

The trial, known as the 'LiCALS trial' involved 214 patients with amyotrophic lateral sclerosis (ALS – a type of MND) who were currently taking riluzole. Patients were randomly allocated daily doses of oral [lithium](#) (107 patients), or a placebo (107 patients) and followed for

18 months.

The findings, published recently in the *The Lancet Neurology*, report that while lithium was safe, there was no significant increase in [survival rates](#) for patients prescribed lithium, compared to the placebo.

Previous research had found that lithium had neuroprotective effects in cells and animal models of neurodegeneration.

Professor Ammar Al-Chalabi, chief investigator of the trial from the Department of Clinical Neuroscience at King's Institute of Psychiatry, says: "A previous small study showed that lithium might slow down ALS and improve survival rates, but the result was not certain. What was needed was a definitive trial to show whether or not this was an effective treatment for patients with ALS.

"Although the results are disappointing, the trial has allowed the development of a trials network of ten centres in the UK, which will be of great benefit for rapidly testing future therapies. We are most grateful to the [patients](#) who took part in the trial and not only helped answer the question of whether lithium could treat ALS, but also helped in establishing a trials network. We will continue our search for novel treatments for this devastating disease."

Funded by the Motor Neurone Disease Association (MNDA), the trial was coordinated by the National Institute for Health Research (NIHR) DeNDRoN (Dementias and [Neurodegenerative Diseases](#) Network).

Dr Brian Dickie, Director of Research Development at the MND Association says: "As many people will know, when lithium was first proposed as having benefit in MND, a couple of small, short-term trials were performed to establish whether the drug had a large and rapid effect on physical changes in disease progression. This trial, by contrast,

was developed to ask whether the drug had a more subtle benefit over a longer time course, as is the case with riluzole, using survival times as the primary measure. The only way to answer this question was by performing larger, lengthier and more comprehensive studies. While the result is deeply disappointing, we now have a clear answer."

More information: Al-Chalabi, A. et al. 'Lithium in patients with amyotrophic lateral sclerosis (LiCALS): a phase 3 multicentre, randomised, double-blind, placebo-controlled trial' *The Lancet Neurology*. [doi:10.1016/S1474-4422\(13\)70037-1](https://doi.org/10.1016/S1474-4422(13)70037-1)

Provided by King's College London

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