

POSTER 115

Lithium urinary levels and suicide mortality rate in Portugal

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Resumo

Introduction: Suicide is a major public health problem, estimated to be the cause of death of more than 700.000 people a year worldwide. Lithium is not considered an essential physiological element. However, a high dietary intake of lithium has been associated with beneficial effects, particular, a decrease in the suicide rate, possibly due to lithium having a known therapeutic role in bipolar disorder [1]. **Objectives:** To assess the existing scientific evidence on the relation between lithium levels in drinking water and the suicide rate in distinct world regions. **Methods:** An exhaustive literature search on the topic was carried out on PubMed, between January and February 2022. **Results:** In the majority of the published studies, the suicide mortality rate was shown to be inversely related to lithium levels in drinking water. However, this relation was not observed

in some studies, including in Portugal. Additionally, it seems that a minimum concentration of 30 µg/L is the threshold from which such relation is observed [2,3,4,5].

Conclusions: An inverse relation has been demonstrated between the lithium concentration in drinking water and the suicide mortality rate. Portugal presented itself as one of the exceptions. The main limitation of these studies (ecological studies) is that they assume a correlation between the concentration of lithium in drinking water and the intake of lithium. However, other sources may be important. The determination of urinary lithium levels could represent an advance in addressing the issue of the possible protective effect of lithium concerning the tendency to suicide, by allowing a more realistic determination of lithium intake by the general population.

Keywords: lithium; suicide; Portugal; drinking water; urinary levels

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