Vitamin Deficiency and Systemic Failure: The Case For Greater Focus On Wernicke-Korsakoff Syndrome

McGlacken-Byrne D, Wallace E.
William Stokes Postgraduate Centre, St. James’s Hospital, Dublin 8.

Dear Sir,

Wernicke-Korsakoff Syndrome (WKS) is a disorder of thiamine deficiency characterised in the acute phase by confusion, ataxia and ophthalmoplegia, with occasional progression to an irreversible cognitive impairment and anterograde amnesia. Despite its profoundly damaging effects on the lives of patients and their families, much remains unknown about this mysterious syndrome.

Our attention turned to WKS following a case seen in our tertiary hospital, of a previously healthy gentleman in his forties admitted with collapse on a background of recent alcohol bingeing. He developed unresolving confusion and confabulation, was formally diagnosed with WKS and was eventually discharged to a nearby nursing home after a 127-day hospitalisation.

Utilising the Hospital In-Patient Enquiry (HIPE) database, we conducted a retrospective review of cases of WKS encountered in our hospital. We found that this man’s lengthy hospitalisation and poor long-term outcome are typical of WKS. Between 2005 and 2018, there were 73 admissions (of 57 patients) to St. James’s Hospital with the ICD10 coding “F10.6, mental and behavioural disorders due to use of alcohol, amnesic syndrome”. Of these 57 patients, 23 were discharged to a long-term care facility. The 57 patients accounted for 5740 inpatient bed-days, or 100.7 days per patient. Our analysis points to four important issues in current clinical knowledge and policy regarding WKS.

Firstly, the prevalence of WKS is not known, but it is certainly underestimated. Only a fraction of cases discovered in autopsy studies had been diagnosed clinically (between 1% and 20%)}. Most autopsy studies estimate the whole-population prevalence to be 1%-2%, roughly similar to that of Alzheimer’s dementia or schizophrenia.

Second, the evidence base guiding the clinical management of thiamine deficiency is scarce. A Cochrane Review in 2013 of research into the optimal dose, route and duration of thiamine treatment in the acute phase found just two studies meeting inclusion criteria, one of which ended early producing no results. The long-term prescription of prophylactic oral thiamine, meanwhile, has never formed the basis of a clinical trial and is of unknown benefit.
Third, thiamine is not covered by the General Medical Services (GMS) scheme, being formally classed as a vitamin and not a medication. Consultant-initiated applications for funding must be made for patients at risk of WKS under Discretionary Hardship Arrangements. Thus, while the drug uptake among patients prescribed prophylactic thiamine has never been quantified, it is likely to be lower than prescribers might assume.

Fourth, the lengthy hospital stays and long-term residential care needs of this cohort highlight WKS as a public health issue of great economic and human cost. Thiamine fortification of breadflour and alcohol beverages has been examined from a health economics standpoint and found to be cost-effective\(^3\), while breadflour fortification has been implemented in several countries including Australia, with a subsequent observed reduction in WKS prevalence\(^4\).

WKS is an under-researched and often catastrophic disorder with a predilection for marginalised patient subgroups. There are medical, economic and moral arguments for more research and policy work seeking to reduce the economic and human cost of this disorder.

**Corresponding Author**
Domhnall McGlacken-Byrne
William Stokes Postgraduate Centre, St. James’s Hospital, Dublin 8.
Email: mcglackd@tcd.ie

**References**
