Malaria prevention, mefloquine neurotoxicity, neuropsychiatric illness, and risk-benefit analysis in the Australian Defence Force

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Abstract

The Australian Defence Force (ADF) has used mefloquine for malaria chemoprophylaxis since 1990. Mefloquine has been found to be a plausible cause of a chronic central nervous system toxicity syndrome and a confounding factor in the diagnosis of existing neuropsychiatric illnesses prevalent in the ADF such as posttraumatic stress disorder and traumatic brain injury. Overall health risks appear to have been mitigated by restricting the drug’s use; however serious risks were realised when significant numbers of ADF personnel were subjected to clinical trials involving the drug. The full extent of the exposure, health impacts for affected individuals, and consequences for ADF health management including mental health are not yet known, but mefloquine may have caused or aggravated neuropsychiatric illness in large numbers of patients who were subsequently misdiagnosed and mistreated or otherwise failed to receive proper care. Findings in relation to chronic mefloquine neurotoxicity were foreseeable, but this eventuality appears not to have been considered during risk-benefit analyses. Thorough analysis by the ADF would have identified this long-term risk as well as other qualitative risk factors. Historical exposure of ADF personnel to mefloquine neurotoxicity now also necessitates ongoing risk monitoring and management in the overall context of broader health policies.
The term 'benefit-risk ratio' is often used as a general term linked to the use of a medicine. To balance risk and benefit is, however, a very complex exercise. For most medicines the benefits are limited to a few indications and for an individual patient there is usually only a single benefit sought but the potential risks are multiple. Perceptions of risks versus benefits are influenced to a great extent by the context in which they occur. Thus, perception of risk may be different to actual...