Reviewer’s report

Title: SIDS Pathogenesis. A review of hypotheses: Plausibility and evidence

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Reviewer: James A Morris

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This article is a scholarly review of work pertinent to the pathogenesis of sudden infant death syndrome (SIDS). The author argues that hypotheses of causation must explain both the pathological and epidemiological features. It is too easy, but unfortunately fashionable, to claim that SIDS has many different causes. This means that any hypothesis can claim to explain a subset even if it is inconsistent with the principle features of the condition. Paul Goldwater will have none of this wishy washy approach. He reviews the main theories of causation and explains why most fail. His style is hard hitting with a rigid logical argument and strong conclusions. I suspect that most readers will find things to disagree with but everybody in the field will benefit from reading the article and thinking carefully about what is written. I agree with most of what he says but am not convinced that ALTE and SIDS are unrelated. ALTE is more common in SIDS than in controls and physiological recordings in the few cases of SIDS monitored at the time of death showed changes similar to ALTE.

Infection emerges as the best explanation for the changes in SIDS. Fortunately we can now prove or disprove this assertion using molecular techniques (genomic and proteomics). I suspect that searching for bacterial toxins in fluids and tissues of SIDS cases will give us the answer in the near future.

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I have given evidence, and received fees, in cases of sudden infant death in which the carers have been accused of non accidental injury but in which the possibility of infection, as the cause of death, has been an issue.