Reviewer's report

Title: Sudden cardiac death in the young (5-39 years) in the canton of Vaud, Switzerland

Version: 4
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Reviewer: Bo Gregers Winkel

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This study by Hofer et al deals with SCD in the canton of Vaud, Switzerland in the period 2000-2007. Causes of death are derived through central statistics. Cases are selected based on selected cause of death as listed in registry. Circumstances relating to the deaths are not taken into account.

The aims of the article are to determine the incidence of SCD, the autopsy rate, and the percentage of autopsies, which confirmed the diagnoses of SCD, for individuals aged 5 to 39 years.

I have previously reviewed this paper. My concerns at that point have to some extent been addressed. However I still have some major issues that need to be addressed.

I find that the article in its present form succeeds better in focusing on the problems in the handling of these deaths in canton of Vaud and the possible consequences. However, I still have a great concern regarding the use of the term SCD in the study.

1) The incidence of SCD, in my opinion, must rely on somewhat reliable data. I can’t see that every death has been investigated in relations to circumstances relating to the death. Hence, no information indicating that the death was sudden and unexpected, exists. 1122 deaths all together are not that many. Why did you focus on selected deaths? Could you retrieve more information on each case, e.g. prior disease, medication, family history, circumstances relating to the death, to further elucidate with death were sudden and unexpected? To me, this approach would be more informative. As you correctly state, cause of death registries often fail to be accurate. To me, the proxy (cardiovascular death equals SCD) is unusable. If you do not have access to the information above, I think you need to modify your results. As such, I wouldn’t call these deaths SCD, but merely cardiovascular deaths. And then discuss from thereon.

2) Incidence rates: These figures include non-autopsied cases. From prior studies, it is well known that only approximately half of possible SCD (SD) is in fact SCD after autopsy. In addition, as already mentioned you do not know if all deaths were sudden and unexpected. Hence, these incidence rates must be taken with great caution. In relations to above concern, I think you should reconsider using the term SCD in conjunction with the incidence rates you present...
Minor issues:
Page 6. Sentence starting with “An autopsy was performed….” This sentence is unclear, perhaps because the the numbers are incorrect? (121 vs 124). Please rephrase in appropriate.
Page 7. Line 3-5. What was the confirmation of the autopsies? Cause of death? Sudden and unexpected death? Please clarify.
Table 1: Were there no deaths under age 15?
Table 3: Do I understand it correct, that only 4/11 drownings actually were drownings? What was then the cause of death?
Table 3: The percentage of "no data concerning autopsy" are very high in ill-defined causes. Do you have an explanation?
Table 4: Winkel et al (ref 5) is nationwide including all deaths (hence general population, both autopsied and non-autopsied)

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

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

Declaration of competing interests:
I declare that I have no competing interests