Reviewer’s report

Title: Prevention of sudden cardiac death in patients with chronic kidney disease.

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Reviewer: Christiane Drechsler

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This manuscript is a review reporting about risk factors and potential treatments of sudden cardiac death in the general population and patients with chronic kidney disease.

The topic is of interest and relevant to clinicians.

I have some comments and suggestions:

Abstract: „Treatment of arrhythmias in CKD is much more difficult than in patients with preserved renal function“ – the statement appears twice, i.e. redundant. Therefore the last sentence can be deleted.

Introduction: „CV diseases are the cause of about 50% of deaths in Europe.“ The references provided for his statement are confusing; the reader does not see how these references (Polish Lipid association; Hypertension) support the statement and may be citations from citations. Please provide the original sources.

Similarly, references 4 and 5 are misleading. For the main causes of CKD, please provide original sources, for example the data from USRDS or the ERA-EDTA registry.

The reference confusion continues throughout the paper, please carefully revise to enable the reader to follow your statements directly.

„Mortality of patients with CKD is mainly associated with ischemic heart disease, MI and sudden cardiac death“. In fact, according to the USRDS, MI and ischemic heart disease account for a relatively small proportion of deaths, up to 11%. In contrast, non-cardiovascular causes account for a much higher proportion of deaths, e.g. infectious deaths! So please be carefully with this statement, potentially confusing the reader and more specifically provide the percentages of deaths attributed to specific causes, e.g. with data from USRDS.

Search strategy: In general, most dialysis patients are found dead in bed without a clear hint that a (relatively) sudden death was sudden CARDIAC death. So it would be helpful to include the term „sudden death“ in the search strategy. It is often very difficult to determine whether a sudden death was of cardiac origin as not all studies have regular ECG and cardiac enzyme assessments available; however the data about sudden deaths accounting for one quarter of all deaths in dialysis patients represent clinical practice and are important not to be missed in a review.
Main text: The structure of the main text may be improved to enable the reader a clear overview. Currently, data from the general population and CKD and dialysis are mixed throughout the text. However, data from the general population cannot be readily applied to CKD patients. I suggest to restructure the text to provide information more clearly:

1) general population
   a. risk factors and knowledge about SCD
   b. treatment of SCD in the general population

2) CKD
   a. Different risk factors: description of current knowledge
   b. Identification of patients at risk of SCD
   c. Treatment of SCD in patients with CKD

3) Dialysis
   a. Dialysis associated risk factors
   b. Treatment and specific considerations, caveats in patients on dialysis

Please revise references 19 about hypokalemia in the context of hypertension as the main player for ventricular arrhythmias; it is not obvious for the reader. Also, there are many references „in press“ which are not visible for the reader. As long as there are enough published data (visible for the reader), please use the published data.

The statement about the findings from the 4D study are misleading. It is an assumption that patients found dead in bed may have suffered from obstructive sleep apnea, but there are no measures or objective data available. Refs 55-56 do not refer to the 4D study. In contrast the 4D study investigated and found many potential risk markers including Vitamin D status, glycemic control, left ventricular hypertrophy, absence of sinus rhythm, wasting, BNP to affect the risk of sudden cardiac death. These data are published and helpful to identify patients at risk of SCD. The data can be used to support the authors overview of current knowledge concerning risk stratification for SCD in dialysis patients.

**Level of interest:** An article of importance in its field

**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