Supplemental Material

Supplementary figure 1: number of primary studies by publication year

Supplementary figure 2: Mortality according to wearing duration of WCD

Supplementary figure 3: Relative frequency of successful shocks according to number of studies

Supplementary figure 4: Relative frequency of inappropriate shocks according to number of publications

Supplementary figure 5: Compliance – hours per day wearing time vs. wearing duration in days

Supplementary table 1: Quality assessment RCT

**Olgin JE, Pletcher MJ, Vittinghoff E, Wranicz J, Malik R, Morin DP, et al. Wearable Cardioverter-Defibrillator after Myocardial Infarction. The New England journal of medicine. 2018;379(13):1205-15.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Criteria for RCT assessment** | **Yes** | **No** | **Unclear** |
| **Selection** | | | |
| Adequate method for randomization used? | x |  |  |
| Allocation concealment ensured? |  |  | x |
| **Comparability** | | | |
| Were the two groups similar after randomization concerning major prognostic parameters and confounders? | x |  |  |
| Were the study participants blinded? |  | x2 |  |
| Were the persons who made the intervention blinded? |  | x2 |  |
| Were the outcome adjudicating persons blinded? | x |  |  |
| Did the study groups get the same treatments apart from the verum? | x |  |  |
| **Outcomes** | | | |
| Were the outcomes collected at the same time points? | x |  |  |
| Was the dropout rate below 20 %? | x |  |  |
| Was the differentiated drop-out rate between the study groups lower than 15 percent points? | x |  |  |
| Was an intention-to-treat analysis (ITT) conducted and was it correct? | x |  |  |
| Does it seem that all collected outcomes have been reported? |  |  | x1 |
| **Assessment of risk of bias** | **Low** | **Unclear** | **High** |
| x |  |  |

1 not all of the outcomes listed in table 4 are reported.

2 Participants and clinicians were not blinded to treatment assignments (LifeVest versus no LifeVest) as it was assumed that the primary outcome “overall mortality” was unlikely to be significantly affected by either participant or clinician knowledge of treatment assignment.

Supplementary table 2: Quality assessment non-randomised controlled trial

**Zishiri ET, Williams S, Cronin EM, Blackstone EH, Ellis SG, Roselli EE, et al. Early risk of mortality after coronary artery revascularization in patients with left ventricular dysfunction and potential role of the wearable cardioverter defibrillator. Circulation Arrhythmia and electrophysiology. 2013;6(1):117-28.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Criteria for the assessment of cohort studies** | | **Yes** | **No** |  | **Unclear** |
|  | **Selection** | | | | |
| Have the study groups been recruited from the same population in the same time period? | |  | x |  |  |
| Did the authors ensure that a defined outcome was not already fulfilled at the start of the study? | | x |  |  |  |
| Were the interventions judged the same in both groups? | |  |  |  | x |
|  | **Comparability** | | | | |
| Is the distribution of prognostic factors between the groups sufficiently described? | | x |  |  |  |
| Is the distribution of prognostic factors between the groups similar? | | x |  |  |  |
|  | **Outcome** | | | | |
| Were the outcomes measured the same and while blinded? | |  | x |  |  |
| Were potential confounders considered in the statistical assessment? | | x |  |  |  |
| Was the study length adequate and identical for both groups? | | x |  |  |  |
| Was the general drop-out rate below 20 %? | |  |  |  | X |
| Was the differentiated drop-out rate between the study groups lower than 15 percent points? | |  |  |  | X |
| **Assessment of risk of bias** | | **Low** | **Unclear** |  | **High** |
|  | | |  |  | X |

Supplementary table 3: Quality assessment of case-series according to the Quality Appraisal Tool for Case Series of the Institute of Health Economics 2012. Operationalisation of assessment questions.

|  |  |
| --- | --- |
| **Bewertungsfrage** | **Operationalisierung** |
| 1. Is the hypothesis/aim/objective of the study stated clearly in the abstract, introduction, or methods section? | YES: Hypothesis, aim or objective of the study is reported according to the PICO criteria population, intervention, and target outcomes (Morbidity, Mortality, Safety and Quality of life); reporting of a comparator is not possible and not necessary in non-comparative studies.  NO: Hypothesis, aim or objective of the study is not reported or population, intervention, or target outcomes are not reported. |
| 2. Are the characteristics of the participants included in the study described? | YES: Number of participants, distribution of age and sex, etiology, LVEF baseline and cardiovascular risk factors (e.g. smoking, diabetes) are reported  NO: at least one of the parameters, mentioned above is missing |
| 3. Were the cases collected in more than one centre? | YES: Data collection in ≥2 centres  NO: Data collection in 1 centre |
| 4. Are the eligibility criteria (inclusion and exclusion criteria) for entry into the study explicit and appropriate? | YES: Inclusion and exclusion criteria are clearly defined, replicable and suitable for the leading question; the cardiac basic disease has to be clearly defined. If the criteria are mentioned in previous publications, the answer is YES.  NO: Selection criteria are not clearly defined or the relevant criteria are not or not completely mentioned in previous publications. |
| 5. Where the participants recruited consecutively? | YES: Consecutive recruitment is clearly reported. Enrollment in a registry is taken for a consecutive recruitment.  NO: Other ways of recruitment, e.g. intervention after considerable distance or dependant on availability of ressources. Recruitment is not clearly defined. |
| 6. Did participants enter the study at a similar point in the disease? | n.a.\* |
| 7. Was the intervention clearly described in the study? | YES: A detailed description of the intervention is provided (main parameters are parts and use of the LifeVest®, training, device version, therapy algorythm) is reported or it is pointed to a previous publication containing a prescription of the intervention.  NO: A detailed description of the intervention is not provided. A referral to previous publications is missing. |
| 8. Were additional interventions (co-interventions) clearly reported in the study? | YES: An associated therapy (OPT, ambulatory or in-patient monitoring) is reported at least by providing the number for patients with medication or associated therapy is obviously not necessary or OPT according to guidelines is mentioned.  NO: Information to an associated therapy is not provided. |
| 9. Are the outcome measures clearly defined in the introduction or methods section? | YES: All major outcomes and their operationalisation (except prespecified parameter like LVEF) are reported in introduction or methods section.  NO: Major outcomes are mentioned in results or discussion section, only. Outcomes are just mentioned without operationalization. Outcomes are not relevant to answer the study questions. |
| 10. Were relevant outcomes appropriately measured with objective and/or subjective methods? | YES: Measurement of arrhythmic events and adjudication of appropriate and inappropriate shocks were conducted through verification of WCD recordings by a ZOLL technician or physician and at least one author of the publication. LVEF was measured by established proceedings, especially echocardiography or mahnetic resonanz imaging (MRI). Total mortality was measured by death certificate, arrhythmic mortality by WCD recordings. Quality of life must be measured by a validated method.  NO: Methods of measurements of an effect on an outcome are not reported. The specific, not reported outcome should be mentioned. |
| 11. Were outcomes measured before and after intervention? | YES: LVEF was measured at baseline. Quality of life at baseline (before fitting with a WCD) was measured. For the incidence of arrhythmic events, number of appropriate and inappropriate shocks, delayed shocks, successful defibrillations and mortality, baseline data is not reasonable.  NO: Data for LVEF and Quality of life at baseline are not reported. Daten zur Lebensqualität zu Baseline sind nicht angegeben. The outcome with the missing baseline data should be mentioned. |
| 12. Were the statistical tests used to assess the relevant outcome appropriate? | YES: Statistical methods are clearly described and appropriate.  NO: Statistical methods are not clearly described or inappropriate. |
| 13. Was the length of follow-up reported? | YES: Study and observation time (wear time of the WCD, if applicable separated from follow-up without WCD) are clearly reported.  NO: Study and observation time are not clearly reported or separated. |
| 14. Was the loss to follow-up reported? | YES: Loss to follow-up is reported by number or percentage.  NO: Loss to follow-up is not reported. |
| 15. Does the study provide estimates of the random variability in the data analysis of relevant outcomes? | YES: Measures of dispersion (standard error, standard deviation, spans, interquartiles range) or confidence interval are reported to the respective estimator.  NO: Effect size is reported without measures of dispersion or confidence intervals. |
| 16. Are adverse events reported? | YES: Occurrence of at least one adverse event is reported (according to tab 3). Nonappearance of adverse events is reported explicitely.  NO: Reporting on adverse events is missing. |
| 17. Are the conclusions of the study supported by results? | YES: The main conclusions are supported by evidence of the results section.  NO: The main conclusions are not supported by evidence of the results section. |
| 18. Are both competing interests and sources of support for the study reported? | YES: Conflicts of interests as well as sponsors are reported.  NO: Either no information is given or only one aspect is covered. |

\* Sudden cardiac arrest/sudden cardiac death can occur in different phases of a disease, thus a judgement is impossible.

ICD: implantable cardioverter-defibrillator, LVEF: left ventricular ejection fraction, OPT: optimal pharmacological treatment, WCD: wearable cardioverter-defibrillator

Supplementary table 4: Quality assessment of non-comparative prospective studies

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Barraud, 2018 | Barsheshet, 2015 | Bhaskaran, 2016 | Daimee, 2018 | Erath, 2017 | Erath, 2018 | Feldman, 2004 | Kao, 2012 | Kondo, 2015 | Kutyifa, 2015 | Kutyifa, 2018b | Mitrani, 2013 | Odeneg, 2018 | Rao, 2011 | Röger, 2018 | Sasaki, 2017 |
| 1. Is the hypothesis/aim/objective of the study stated clearly in the abstract, introduction, or methods section? | yes | yes | no | yes | no | no | yes | yes | no | yes | yes | no | no | yes | no | no |
| 2. Are the characteristics of the participants included in the study described? | yes | yes | no | yes | no | yes | yes | yes | no | yes | yes | yes | yes | yes | yes | no |
| 3. Were the cases collected in more than one centre? | no | yes | no | yes | no | no | yes | yes | no | yes | yes | no | yes | yes | no | no |
| 4. Are the eligibility criteria (inclusion and exclusion criteria) for entry into the study explicit and appropriate? | yes | yes | no | no | no | no | yes | yes | no | no | no | no | no | no | no | no |
| 5. Where the participants recruited consecutively? | yes | no | No | yes | yes | yes | no | no | yes | no | no | yes | yes | yes | yes | yes |
| 6. Did participants enter the study at a similar point in the disease? | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. |
| 7. Was the intervention clearly described in the study? | no | no | no | no | yes | yes | yes | yes | yes | yes | no | yes | no | yes | yes | no |
| 8. Were additional interventions (co-interventions) clearly reported in the study? | yes | yes | no | yes | yes | yes | yes | yes | no | yes | yes | no | no | no | yes | no |
| 9. Are the outcome measures clearly defined in the introduction or methods section? | no | no | no | yes | yes | no | no | no | no | yes | no | no | yes | yes | yes | no |
| 10. Were relevant outcomes appropriately measured with objective and/or subjective methods? | no | no | no | no | no | no | no | no | no | no | no | no | yes | yes | yes | no |
| 11. Were outcomes measured before and after intervention? | yes | yes | yes | yes | yes | yes | n.a. | yes | yes | yes | yes | yes | yes | n.a. | yes | no |
| 12. Were the statistical tests used to assess the relevant outcome appropriate? | yes | yes | no | yes | yes | yes | no | yes | yes | yes | yes | yes | yes | yes | yes | yes |
| 13. Was the length of follow-up reported? | yes | yes | yes | yes | yes | yes | no | no | yes | yes | no | yes | no | yes | yes | no |
| 14. Was the loss to follow-up reported? | no | yes | no | no | no | no | no | yes | no | no | no | yes | no | no | yes | no |
| 15. Does the study provide estimates of the random variability in the data analysis of relevant outcomes? | yes | yes | yes | no | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes |
| 16. Are adverse events reported? | yes | no | yes | no | yes | yes | yes | yes | yes | yes | no | yes | yes | yes | yes | no |
| 17. Are the conclusion of the study supported by results? | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes |
| 18. Are both competing interests and sources of support for the study reported? | no | yes | yes | yes | yes | yes | no | yes | no | yes | yes | yes | yes | no | yes | no |

n.r.: not relevant (a SCA/SCD can occur in different indications in several disease phases, thus, judgement is not possible), n.a.: LVEF is not defined as an outcome

Supplementary table 5: Quality assessment of non-comparative retrospective studies

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Beiert, 2017 | Castro, 2017 | Christ, 2014 | Chung, 2010 | Dillon, 2010 | Duncker, 2014 | Duncker, 2017a | Duncker, 2017b | Duncker, 2017c | Ellenbogen, 2017 |
| 1. Is the hypothesis/aim/objective of the study stated clearly in the abstract, introduction, or methods section? | no | no | no | yes | no | yes | yes | yes | yes | yes |
| 2. Are the characteristics of the participants included in the study described? | yes | yes | no | no | no | no | yes | yes | no | yes |
| 3. Were the cases collected in more than one centre? | no | no | no | yes | no | no | no | no | yes | yes |
| 4. Are the eligibility criteria (inclusion and exclusion criteria) for entry into the study explicit and appropriate? | no | no | no | no | yes | no | yes | yes | no | yes |
| 5. Where the participants recruited consecutively? | yes | yes | no | yes | no | yes | no | no | no | yes |
| 6. Did participants enter the study at a similar point in the disease? | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. |
| 7. Was the intervention clearly described in the study? | no | no | no | yes | yes | no | no | no | no | no |
| 8. Were additional interventions (co-interventions) clearly reported in the study? | yes | no | no | no | no | no | yes | yes | yes | no |
| 9. Are the outcome measures clearly defined in the introduction or methods section? | yes | no | no | yes | yes | no | no | no | no | yes |
| 10. Were relevant outcomes appropriately measured with objective and/or subjective methods? | yes | no | no | yes | yes | no | no | no | no | yes |
| 11. Were outcomes measured before and after intervention? | yes | no | yes | yes | n.a. | yes | yes | yes | yes | yes |
| 12. Were the statistical tests used to assess the relevant outcome appropriate? | yes | yes | no | yes | no | yes | yes | yes | yes | yes |
| 13. Was the length of follow-up reported? | no | yes | no | no | no | yes | no | no | yes | yes |
| 14. Was the loss to follow-up reported? | no | no | no | no | no | no | yes | no | yes | no |
| 15. Does the study provide estimates of the random variability in the data analysis of relevant outcomes? | no | yes | yes | yes | yes | no | yes | yes | yes | yes |
| 16. Are adverse events reported? | yes | no | yes | yes | yes | no | yes | yes | yes | yes |
| 17. Are the conclusion of the study supported by results? | yes | no | yes | yes | yes | no | yes | yes | yes | yes |
| 18. Are both competing interests and sources of support for the study reported? | yes | yes | no | yes | no | yes | yes | yes | yes | no |

n.r.: not relevant (a SCA/SCD can occur in different indications in several disease phases, thus, judgement is not possible), n.a.: LVEF is not defined as an outcome

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Ellenbogen, 2018 | Epstein, 2013 | Everitt, 2011 | Heimeshoff, 2018 | Kandzari, 2016 | Kaspar, 2018 | Klein, 2009 | Lackermair, 2018 | Lamichane, 2017 |
| 1. Is the hypothesis/aim/objective of the study stated clearly in the abstract, introduction, or methods section? | yes | yes | no | yes | yes | no | no | no | no |
| 2. Are the characteristics of the participants included in the study described? | yes | no | no | yes | yes | yes | no | yes | no |
| 3. Were the cases collected in more than one centre? | yes | yes | yes | no | yes | yes | yes | no | yes |
| 4. Are the eligibility criteria (inclusion and exclusion criteria) for entry into the study explicit and appropriate? | yes | no | no | no | no | no | no | no | yes |
| 5. Where the participants recruited consecutively? | yes | yes | no | no | no | yes | no | yes | yes |
| 6. Did participants enter the study at a similar point in the disease? | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. |
| 7. Was the intervention clearly described in the study? | no | yes | no | yes | yes | yes | yes | no | yes |
| 8. Were additional interventions (co-interventions) clearly reported in the study? | no | no | no | no | yes | no | no | yes | no |
| 9. Are the outcome measures clearly defined in the introduction or methods section? | yes | yes | no | no | yes | yes | no | no | yes |
| 10. Were relevant outcomes appropriately measured with objective and/or subjective methods? | yes | no | no | no | yes | yes | no | no | yes |
| 11. Were outcomes measured before and after intervention? | n.a. | n.a. | no | no | n.a. | no | no | no | n.a. |
| 12. Were the statistical tests used to assess the relevant outcome appropriate? | yes | yes | no | yes | yes | yes | no | yes | yes |
| 13. Was the length of follow-up reported? | yes | yes | no | yes | no | no | no | no | yes |
| 14. Was the loss to follow-up reported? | no | no | no | no | no | no | no | no | no |
| 15. Does the study provide estimates of the random variability in the data analysis of relevant outcomes? | yes | yes | yes | yes | yes | yes | yes | no | yes |
| 16. Are adverse events reported? | no | yes | yes | yes | no | yes | yes | no | yes |
| 17. Are the conclusion of the study supported by results? | yes | yes | yes | yes | yes | yes | yes | yes | yes |
| 18. Are both competing interests and sources of support for the study reported? | yes | no | no | no | no | no | no | no | no |

n.r.: not relevant (a SCA/SCD can occur in different indications in several disease phases, thus, judgement is not possible), n.a.: LVEF is not defined as an outcome

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Opreanu, 2015 | Reek, 2002 | Salehi, 2016 | Saltzberg, 2012 | Skowasch, 2018 | Wassnig, 2016 | Wan, 2014 | Wan, 2017 | Zylla, 2018 |
| 1. Is the hypothesis/aim/objective of the study stated clearly in the abstract, introduction, or methods section? | yes | no | yes | no | no | no | yes | no | no |
| 2. Are the characteristics of the participants included in the study described? | yes | no | yes | yes | no | no | yes | yes | yes |
| 3. Were the cases collected in more than one centre? | yes | no | yes | yes | yes | yes | yes | yes | no |
| 4. Are the eligibility criteria (inclusion and exclusion criteria) for entry into the study explicit and appropriate? | no | no | no | yes | no | no | yes | yes | no |
| 5. Where the participants recruited consecutively? | yes | no | yes | yes | yes | yes | no | no | no |
| 6. Did participants enter the study at a similar point in the disease? | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. | n. r. |
| 7. Was the intervention clearly described in the study? | yes | yes | yes | yes | no | no | yes | yes | yes |
| 8. Were additional interventions (co-interventions) clearly reported in the study? | yes | yes | yes | no | no | no | no | no | yes |
| 9. Are the outcome measures clearly defined in the introduction or methods section? | yes | no | yes | no | yes | yes | yes | yes | yes |
| 10. Were relevant outcomes appropriately measured with objective and/or subjective methods? | no | no | yes | no | yes | yes | no | yes | yes |
| 11. Were outcomes measured before and after intervention? | n.a. | no | n.a. | yes | yes | n.a. | yes | yes | yes |
| 12. Were the statistical tests used to assess the relevant outcome appropriate? | yes | no | yes | yes | yes | yes | yes | yes | yes |
| 13. Was the length of follow-up reported? | yes | no | yes | no | no | no | yes | yes | yes |
| 14. Was the loss to follow-up reported? | no | no | no | yes | yes | no | no | yes | no |
| 15. Does the study provide estimates of the random variability in the data analysis of relevant outcomes? | yes | yes | yes | yes | yes | yes | yes | yes | yes |
| 16. Are adverse events reported? | yes | yes | yes | yes | no | yes | no | yes | yes |
| 17. Are the conclusion of the study supported by results? | yes | yes | no | yes | yes | yes | yes | yes | yes |
| 18. Are both competing interests and sources of support for the study reported? | no | no | no | yes | yes | yes | no | no | no |

n.r.: not relevant (a SCA/SCD can occur in different indications in several disease phases, thus, judgement is not possible), n.a.: LVEF is not defined as an outcome

Supplementary table 6: Quality assessment of HTA (Ettinger et al.)

**Ettinger S, Stanak M, Szymanski P, Wild C, Tandara Hacek R, Ercevic D, et al. Wearable cardioverter defibrillators for the prevention of sudden cardiac arrest: a health technology assessment and patient focus group study. Medical devices (Auckland, NZ). 2017;10:257-71.**

**Ettinger S, Stanak M, Huic M, Hacek T, Ercevic D, Grenkovic, R. Wearable Cardioverter-Defibrillator (WCD) therapy in primary and secondary prevention of sudden cardiac arrest in patients at risk. EUnetHTA Version 1.4, 20 November 2016.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Criteria for the assessment of systematic reviews and meta-analyses** | **Yes** | **No** | **Unclear** |
| Is the review based on a defined research question (PICO)? | x |  |  |
| Were selection criteria clearly defined? | x |  |  |
| Was a comprehensive, systematic literature search conducted? | x |  |  |
| Were inclusion and exclusion of studies assessed by at least two persons? | x |  |  |
| Was the methodic quality of the included studies assessed by at least two persons? | x |  |  |
| Was the methodic quality of the included studies considered during evidence sythesis? | x |  |  |
| **META-ANALYSES** | **not applicable** |  |  |
| Was publication bias assessed? |  |  |  |
| Was heterogeneity statistically adressed? |  |  |  |
| Were reasons for heterogeneity analysed appropriately? |  |  |  |
| Was the choice of the statistic model appropriate? |  |  |  |
| **Assessment of risk of bias** | **Low** | **Unclear** | **High** |
|  | **x** |  |  |
| **Comments**   * Internal validity was assessed by two reviewers * The bias risk of internal validity is low. However, there is a limited validity for the transferability of the results to effectiveness under evryday conditions, as there was a strict limitation of study types. * The operationalization of the check list „Quality Appraisal Tool for Case Series Studies“ is not reported * The results of the focus group interviews contain a high risk of bias due to methodic flaws. |  |  |  |

Supplementary table 7: Quality assessment of systematic review (Nguyen et al.)

**Nguyen E, Weeda E, Kohn C, D´Souza B, Russo A, Noreika S, et al. Wearable cardioverter-defibrillators for the prevention of sudden cardiac death: a meta-analysis. J Innov Cardiac Rhythm Manag. 2018;9.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Criteria for the assessment of systematic reviews and meta-analyses** | **Yes** | **No** | **Unclear** |
| Is the review based on a defined research question (PICO)? |  | x |  |
| Were selection criteria clearly defined? | x |  |  |
| Was a comprehensive, systematic literature search conducted? | x |  |  |
| Were inclusion and exclusion of studies assessed by at least two persons? | x |  |  |
| Was the methodic quality of the included studies assessed by at least two persons? |  | x |  |
| Was the methodic quality of the included studies considered during evidence sythesis? |  | x |  |
| **META-ANALYSES** |  |  |  |
| Was publication bias assessed? | x |  |  |
| Was heterogeneity statistically adressed? | x |  |  |
| Were reasons for heterogeneity analysed appropriately? |  | x |  |
| Was the choice of the statistic model appropriate? | x |  |  |
| **Assessment of risk of bias** | **Low** | **Unclear** | **High** |
|  |  |  | **x** |
| **Comments**   * Quality assessment of studies is missing * Statements on potential harms are missing except for inappropriate shocks * A transparent overview of the study populations to exclude overlaps is missing (e.g. list of not considered studies) * A forest plot to exhibit the results of the meta-analysis and the weight of the single studies is missing * Partly, high heterogeneity of the quantitative information synthesis, no subgroup analyses to reveal the reasons for the heterogeneity |  |  |  |

Supplementary table 8: Quality assessment of systematic review (Uyei et al.)

**Uyei J, Braithwaite RS. Effectiveness of wearable defibrillators: systematic review and quality of evidence. International journal of technology assessment in health care. 2014;30(2):194-202.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Criteria for the assessment of systematic reviews and meta-analyses** | **Yes** | **No** | **Unclear** |
| Is the review based on a defined research question (PICO)? | x |  |  |
| Were selection criteria clearly defined? | x |  |  |
| Was a comprehensive, systematic literature search conducted? | x |  |  |
| Were inclusion and exclusion of studies assessed by at least two persons? |  | x |  |
| Was the methodic quality of the included studies assessed by at least two persons? |  | x |  |
| Was the methodic quality of the included studies considered during evidence sythesis? | x |  |  |
| **META-ANALYSES** | **not applicable** |  |  |
| Was publication bias assessed? |  |  |  |
| Was heterogeneity statistically adressed? |  |  |  |
| Were reasons for heterogeneity analysed appropriately? |  |  |  |
| Was the choice of the statistic model appropriate? |  |  |  |
| **Assessment of risk of bias** | **Low** | **Unclear** | **High** |
|  |  |  | **x** |
| **Kommentare**   * 78 % of the included publications are abstracts * Selection and quality assessment was conducted by one reviewer, only |  |  |  |

Supplementary table 9: Reasons for exclusion of publications

|  |  |
| --- | --- |
| **Publication** | **Reason for exclusion** |
| Wearable cardioverter-defibrillator as a bridge to implantable cardioverter-defibrillator treatment. Technology Evaluation Center Assessment Program Executive summary. 2010;25(2):1-5. | Could not be found |
| Agarwal M, Narcisse D, Khouzam N, Khouzam RN. Wearable Cardioverter Defibrillator "The Lifevest": Device Design, Limitations, and Areas of Improvement. Current problems in cardiology. 2018;43(2):45-55. | No systematic literature search |
| Al-Khatib SM, Friedman P, Ellenbogen KA. Defibrillators: Selecting the Right Device for the Right Patient. Circulation. 2016;134(18):1390-404. | No systematic literature search |
| Auricchio A, Klein H, Geller CJ, Reek S, Heilman MS, Szymkiewicz SJ. Clinical efficacy of the wearable cardioverter-defibrillator in acutely terminating episodes of ventricular fibrillation. The American journal of cardiology. 1998;81(10):1253-6. | Improper study question, induced VT/VF |
| Barraud J, Cautela J, Orabona M, Pinto J, Missenard O, Laine M, et al. Wearable cardioverter defibrillator: Bridge or alternative to implantation? World Journal of Cardiology. 2017;9(6):531-8. | No systematic literature search |
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