

## I.1 Excluded clinical studies

**Table 20: Studies excluded from the clinical review**

Study	Exclusion reason
Abuzaid 2018 <sup>1</sup>	Less than minimum duration. Systematic review: study designs inappropriate
Ahmad 2018 <sup>2</sup>	Systematic review: study designs inappropriate. Systematic review: quality assessment is inadequate
Al Halabi 2018 <sup>4</sup>	Systematic review: study designs inappropriate. Systematic review: quality assessment is inadequate. Less than minimum duration
Al-Atassi 2012 <sup>3</sup>	Incorrect study design
Alrifai 2018 <sup>5</sup>	Systematic review: study designs inappropriate. Systematic review: quality assessment is inadequate. Less than minimum duration
Altman 1976 <sup>6</sup>	Not review population. Incorrect study design. Adults who have had a mechanical valve replacement
An 2019 <sup>7</sup>	Systematic review: study designs inappropriate. Less than minimum duration
Ando 2017 <sup>8</sup>	Systematic review: quality assessment is inadequate. Less than minimum duration
Aramendi 1998 <sup>11</sup>	Incorrect interventions. Incorrect study design
Aramendi 2005 <sup>9</sup>	Incorrect interventions
Aramendi 2005 <sup>10</sup>	Incorrect interventions
Aryal 2015 <sup>12</sup>	Systematic review: quality assessment is inadequate. Systematic review: study designs inappropriate. Less than minimum duration
Avezum 2013 <sup>13</sup>	Incorrect study design. Not review population
Banerjee 2017 <sup>14</sup>	Systematic review: quality assessment is inadequate. Less than minimum duration
Burke 2018 <sup>16</sup>	Systematic review is not relevant to review question or unclear PICO. Systematic review: study designs inappropriate. Systematic review: literature search not sufficiently rigorous. Systematic review: quality assessment is inadequate. Systematic review: methods are not adequate/unclear. Inappropriate comparison. Less than minimum duration
Caldeira 2018 <sup>17</sup>	Not review population. Systematic review: quality assessment is inadequate. Systematic review: study designs inappropriate. Less than minimum duration
De Caterina 2017 <sup>20</sup>	Unable to separate population and results for patients with valve replacement from patients with valve repair
De Souza Lima Bitar 2019 <sup>21</sup>	Not review population. Less than minimum duration
Dong 2011 <sup>22</sup>	Not review population. Adults who have had a mechanical valve replacement
Ezekowitz 2016 <sup>24</sup>	Not review population
Farah 1981 <sup>25</sup>	Incorrect study design. Adults who have had a mechanical valve replacement

Gandhi 2015 <sup>26</sup>	Systematic review: study designs inappropriate. Systematic review: quality assessment is inadequate. Less than minimum duration
Geisler 2018 <sup>27</sup>	Systematic review: study designs inappropriate. Systematic review is not relevant to review question or unclear PICO. Systematic review: literature search not sufficiently rigorous. Systematic review: quality assessment is inadequate. Systematic review: methods are not adequate/unclear
Gherli 2004 <sup>28</sup>	Incorrect study design
Guedeney 2019 <sup>29</sup>	Systematic review: study designs inappropriate. Systematic review: literature search not sufficiently rigorous. Systematic review: quality assessment is inadequate. Systematic review is not relevant to review question or unclear PICO. Systematic review: methods are not adequate/unclear
Guimaraes 2019 <sup>30</sup>	This study does not appear to maintain randomisation
He 2019 <sup>32</sup>	Not review population. Systematic review: quality assessment is inadequate. Systematic review is not relevant to review question or unclear PICO
Herold 2017 <sup>33</sup>	Incorrect study design. Incorrect interventions. Inappropriate comparison
Hu 2018 <sup>34</sup>	Systematic review: study designs inappropriate. Systematic review: quality assessment is inadequate. Less than minimum duration
Ichibori 2017 <sup>35</sup>	Incorrect study design
Jamieson 2007 <sup>36</sup>	Incorrect study design. Incorrect interventions
Kawazoe 1990 <sup>38</sup>	Incorrect study design. Adults who have had a mechanical valve replacement. Incorrect interventions. Less than minimum duration
Kuno 2020 <sup>39</sup>	Systematic review: study designs inappropriate
Lawley 2015 <sup>40</sup>	Adults who have had a mechanical valve replacement. Systematic review: study designs inappropriate. Less than minimum duration
Liang 2020 <sup>41</sup>	Systematic review: quality assessment is inadequate
Ma 2019 <sup>42</sup>	Systematic review: quality assessment is inadequate
Maes 2018 <sup>43</sup>	Systematic review: quality assessment is inadequate. Less than minimum duration
Malik 2019 <sup>44</sup>	Systematic review: quality assessment is inadequate
Masri 2017 <sup>45</sup>	Less than minimum duration. Systematic review: quality assessment is inadequate. Systematic review: study designs inappropriate
Massel 2001 <sup>47</sup>	Not review population. Adults who have had a mechanical valve replacement. Systematic review: quality assessment is inadequate
Massel 2013 <sup>46</sup>	Adults who have had a mechanical valve replacement. All studies included patients with mechanical valve replacement with very few including a small number of patients with bioprosthetic valve replacement. Unable to separate patients with bioprosthetic valve replacement from mechanical valve replacement
Mok 1985 <sup>48</sup>	Not review population. Adults who have had a mechanical valve replacement. Incorrect interventions
Nijenhuis 2019 <sup>51</sup>	Systematic review: study designs inappropriate. Systematic review: literature search not sufficiently rigorous. Systematic review: quality assessment is inadequate. Systematic review: methods are not adequate/unclear. Less than minimum duration. Inappropriate comparison
Nowell 2007 <sup>52</sup>	Systematic review: quality assessment is inadequate. Less than minimum duration. Systematic review: study designs inappropriate

Owais 2016 <sup>53</sup>	Incorrect study design. Crossover study. Less than minimum duration. Systematic review: study designs inappropriate. Systematic review: quality assessment is inadequate
Pan 2017 <sup>54</sup>	Not review population. Crossover study. Systematic review is not relevant to review question or unclear PICO. Systematic review: study designs inappropriate. Systematic review: quality assessment is inadequate
Paparella 2016 <sup>55</sup>	Incorrect study design
Perleth 2001 <sup>56</sup>	Adults who have had a mechanical valve replacement. Inappropriate comparison
Raheja 2018 <sup>58</sup>	Less than minimum duration. Systematic review: quality assessment is inadequate. Systematic review: study designs inappropriate
Rajah 1979 <sup>59</sup>	Abstract only. Incorrect interventions
Renda 2017 <sup>60</sup>	Not review population. Systematic review: quality assessment is inadequate. Systematic review is not relevant to review question or unclear PICO
Riaz 2016 <sup>61</sup>	Systematic review: study designs inappropriate. Systematic review: quality assessment is inadequate
Russmann 1997 <sup>63</sup>	Inappropriate comparison. Incorrect interventions. Less than minimum duration
Sharma 2015 <sup>64</sup>	Systematic review: study designs inappropriate. Systematic review: literature search not sufficiently rigorous. Systematic review: quality assessment is inadequate. Systematic review: methods are not adequate/unclear. Less than minimum duration. Inappropriate comparison
Sharma 2018 <sup>65</sup>	Letter/commentary
Sherwood 2018 <sup>66</sup>	Systematic review: study designs inappropriate. Systematic review: literature search not sufficiently rigorous. Systematic review: quality assessment is inadequate. Systematic review: methods are not adequate/unclear. Inappropriate comparison. Less than minimum duration
Siddamsetti 2018 <sup>67</sup>	Systematic review: study designs inappropriate. Systematic review: quality assessment is inadequate. Less than minimum duration
Sterling 2015 <sup>69</sup>	Systematic review: quality assessment is inadequate. Systematic review: study designs inappropriate. Less than minimum duration
Taguchi 1975 <sup>70</sup>	Adults who have had a mechanical valve replacement. Not review population. Incorrect study design. Incorrect interventions. Less than minimum duration
Thourani 2013 <sup>71</sup>	Incorrect study design
Turgeon 2015 <sup>72</sup>	Less than minimum duration. Systematic review: quality assessment is inadequate. Systematic review: study designs inappropriate
Ueyama 2020 <sup>74</sup>	Systematic review: study designs inappropriate
Vavuranakis 2016 <sup>77</sup>	Less than minimum duration. Systematic review: study designs inappropriate. Systematic review: quality assessment is inadequate
Vavuranakis 2018 <sup>76</sup>	Systematic review is not relevant to review question or unclear PICO. Systematic review: study designs inappropriate. Systematic review: quality assessment is inadequate
Verdoia 2018 <sup>78</sup>	Less than minimum duration. Systematic review: study designs inappropriate. Systematic review: quality assessment is inadequate
Zhou 2020 <sup>79</sup>	Not review population
Zhu 2020 <sup>80</sup>	Systematic review: study designs inappropriate

Zuo 2019<sup>81</sup>

Systematic review: study designs inappropriate. Systematic review:  
quality assessment is inadequate