Supplemental material

**Table S1.** Outcomes on RV function

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Study (year)** | **Patients** | **F/u duration (mean or median) (yrs or months)**  | **Lost f/u** | **Method** | **Outcome** | **Outcome pre (mean or median)** | **Outcome post (mean or median)** | **Outcome f/u (mean or median)** | **P-value** |
| **Ing et al. (2014)** | ToF (n=30)PA/VSD (n=6)PA/IVS (n=2)TA (n=3)d-TGA (n=2)DORV (n=2)Isolated PAS (n=2)Other (n=11) | >1Y1-2Y | 23 53  | Echo CMR | RV pressure (mmHg)RV arterial/systolic ratio (%)Gradient (mmHg)Diameter (mm)RVEDV (ml/m2)RVEF (%)PR (%) | 44.19 ± 15.28#51.61 ± 19.49# 19.02 ± 10.45# 5.1 ± 2# 123.1 ± 25.750.4 ± 6.834.4 ± 16 | 41.11 ± 14.32#44.92 ± 16.42#5.70 ± 6.73#10.7 ± 3#--- | 36.08 ± 11.0734.39 ± 12.3617.12 ± 11.679.7 ± 2.7UnchangedUnchangedUnchanged | ????NsNsNs |

#Measured using cardiac catheterization, follow-up after 1 year measured using echocardiography

CMR= cardiac magnetic resonance; DORV= double outlet right ventricle; d-TGA= dextro transposition of the great arteries; F/u= follow-up; IVS= intact ventricular septum; Ns= not significant; PA= pulmonary atresia; PAS= pulmonary artery stenosis; PR= pulmonary regurgitation; RV= right ventricle; RVEDV= right ventricular end-diastolic volume; RVEF= right ventricular ejection fraction; TA= truncus arteriosus; ToF= tetralogy of fallot; VSD= ventricular septum defect

**Table S2.** Quality assessment of the included articles according to the Joanna Briggs quasi-experimental checklist

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Criteria quasi-experimental checklist** | **Fogelman****(1995)** | **Hiremath (2019)** | **Ing****(2014)** | **Oyen****(1995)** | **Shaffer****(1998)** | **Spadoni (1999)** | **Sutton (2008)** |
| Clear ‘cause’ and ‘effect’ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Similar participants | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Similar treatment/care in addition to intervention | NA | NA | NA | NA | NA | NA | NA |
| Control group | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Multiple measurements of outcomes pre and post intervention |  |  |  |  |  |  |  |
| RV function | - | - | 🗶 | - | - | - | - |
| Exercise capacity | - | 🗶 | - | - | - | - | - |
| Lung perfusion | ? | 🗶 | ? | 🗶 | 🗶 | 🗶 | 🗶 |
| Total | ? | 🗶 | 🗶 | 🗶 | 🗶 | 🗶 | 🗶 |
| Complete follow-up and group differences adequately described and analyzed | 🗶 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Outcomes measured similar way | NA | NA | NA | NA | NA | NA | NA |
| Outcomes measured reliable way |  |  |  |  |  |  |  |
| RV function | - | - | ✓ | - | - | - | - |
| Exercise capacity | - | ✓ | - | - | - | - | ✓ |
| Lung perfusion | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Total  | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Appropriate statistical analysis | ✓ | ✓ | 🗶 | 🗶 | ✓ | 🗶 | 🗶 |
| Overall rating | 5/7: | 6/7: | 5/7: | 5/7: | 6/7: | 5/7: | 5/7: |
| Risk of bias | Moderate | Low | Moderate | Moderate | Low | Moderate | Moderate |

RV = Right ventricle

✓= yes, 🗶= no, ?= unclear, NA= not applicable

6 out of 7 or higher (75%) is low risk of bias, 5 out of 7 is moderate risk of bias and 4 out of 7 or lower (60%) is high risk of bias. An unclear assessment was scored as negative. For criteria divided by outcome: The majority was used for the final assessment of risk of bias for criteria divided by outcome.

Supplemental methods

Quality assessment

‘Similar treatment/care in addition to intervention’ and ‘outcomes measured similar way’ were considered not applicable because there is often a lack of a comparative group due to the nature of the study design. Patients are considered as their own control in pre and post intervention study designs. In case of ‘Outcomes measured reliable way’ and ‘Multiple measurements of outcomes pre and post intervention’, the criteria were divided per outcome to provide a detailed overview. The majority was used for the final assessment of risk of bias as originally indicated by the Joanna Briggs Institute (e.g. 2 out of 3 positive assessments for the outcomes was considered a positive assessment overall). The overall assessment was discussed and agreed within the research team and scored as followed: 6 out of 7 or higher (75%) positive assessments was considered low risk of bias, 5 out of 7 positive assessments was considered moderate risk of bias and 4 out of 7 or lower (60%) positive assessments was considered high risk of bias. An unclear assessment was scored as negative.