

Preoperative tests

Routine preoperative tests for elective surgery

Clinical guideline <...>

Appendix J: Forest plots

October 2015

Draft for consultation

*Commissioned by the National Institute for
Health and Care Excellence*

Disclaimer

Healthcare professionals are expected to take NICE clinical guidelines fully into account when exercising their clinical judgement. However, the guidance does not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of each patient, in consultation with the patient and, where appropriate, their guardian or carer.

Copyright

National Clinical Guideline Centre, 2015

Funding

National Institute for Health and Care Excellence

Contents

Appendix J: Forest plots	5
--------------------------------	---

Appendix J: Forest plots

J.1 Resting electrocardiogram (ECG)

Figure 1: Prolonged QTc interval as a predictor of perioperative cardiovascular events

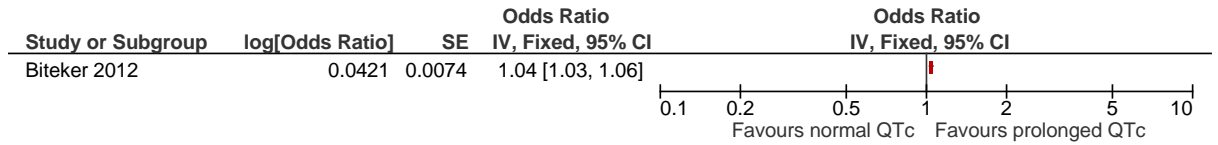


Figure 2: Abnormal ECG as a predictor of post-operative complications

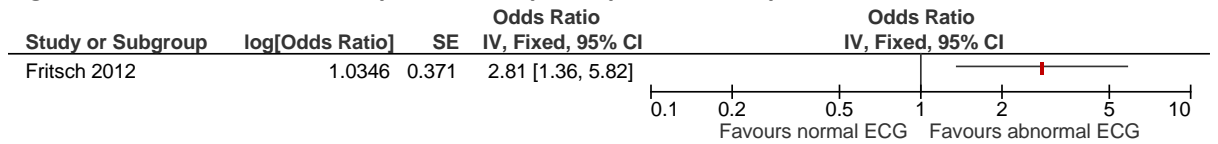


Figure 3: Abnormal ECG as a predictor of one-year mortality

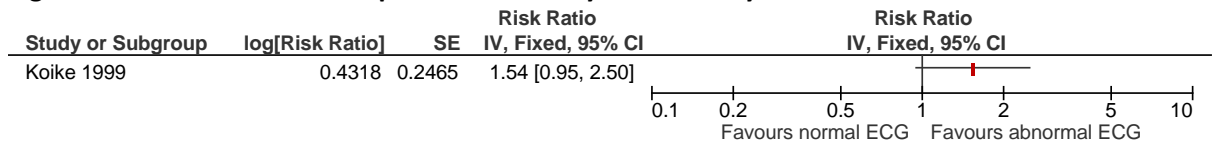


Figure 4: Abnormal ECG as a predictor of survival rate

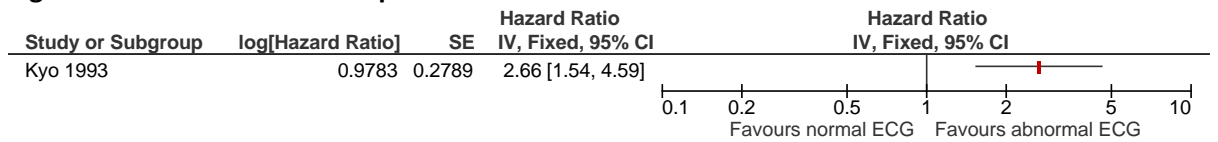


Figure 5: ST segment depression as a predictor of long-term survival

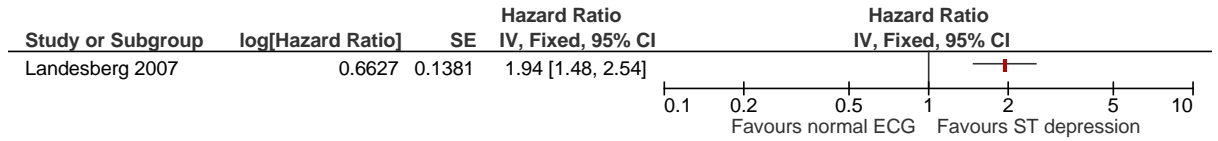


Figure 6: Abnormal ECG as a predictor of post-operative cardiac complications

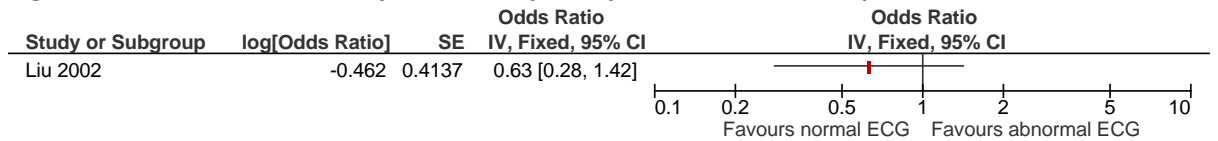


Figure 7: Left bundle branch block as a predictor of post-operative myocardial infarction

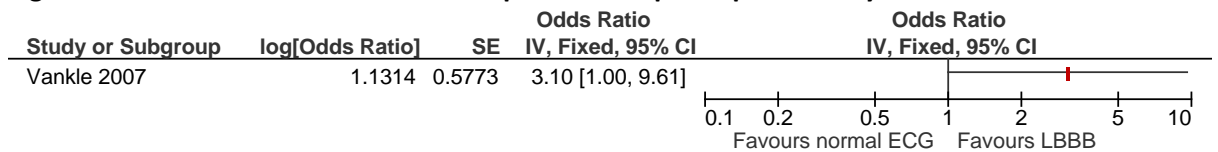


Figure 8: Right bundle branch block as a predictor of post-operative myocardial infarction

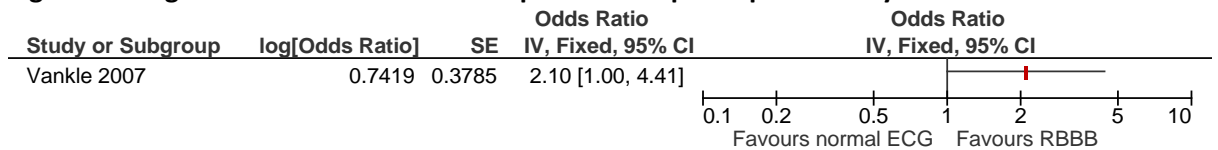
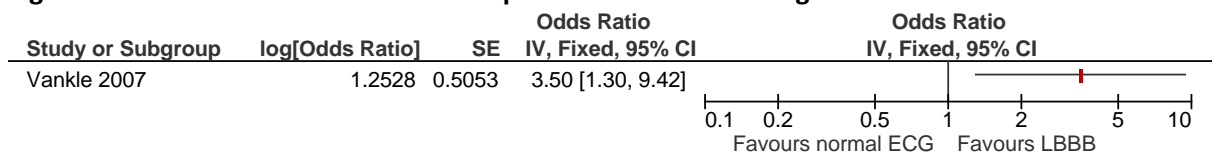


Figure 9: Left bundle branch block as a predictor of death during admission



J.2 Resting echocardiogram

Figure 10: Delay in surgery

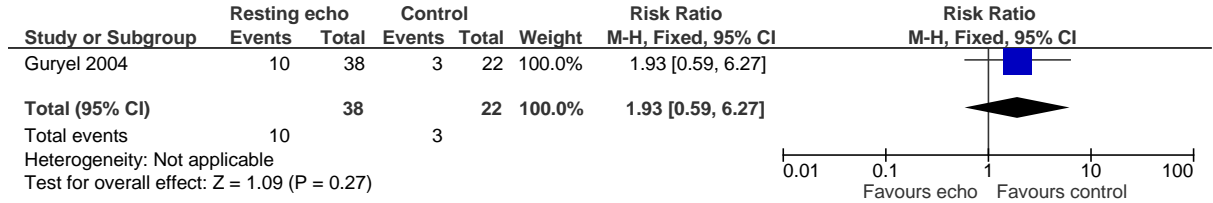


Figure 11: 30-day mortality

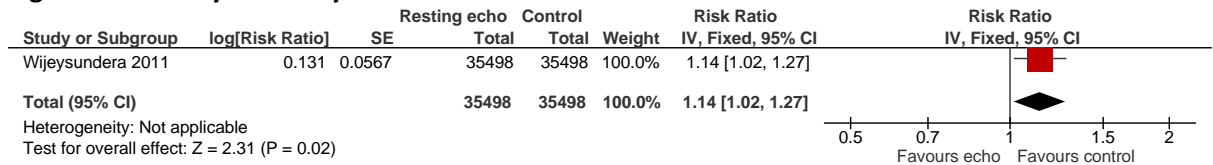


Figure 12: Length of hospital stay

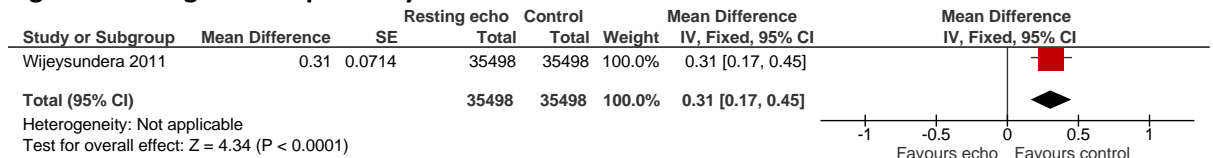


Figure 13: Surgical site infection

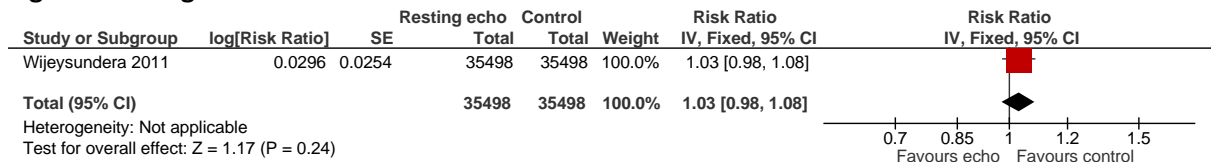
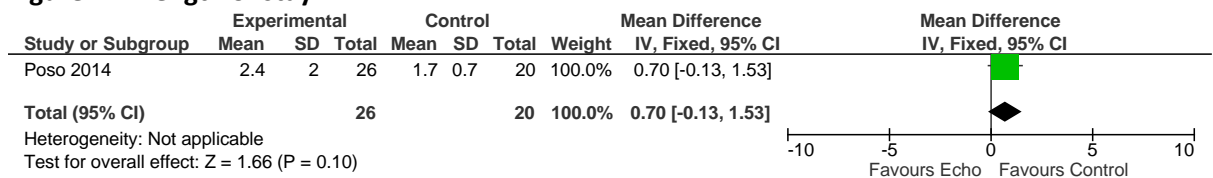


Figure 14: Length of stay

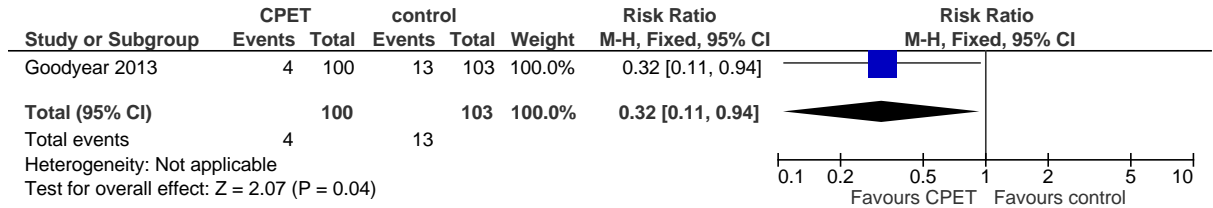


J.3 Cardiopulmonary exercise testing (CPET)

J.3.1 Intervention review

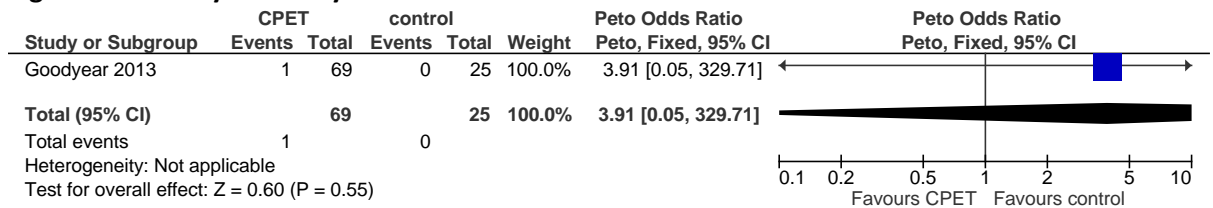
Open AAA surgery

Figure 15: 30-day mortality



EVAR AAA surgery

Figure 16: 30-day mortality



J.3.2 Prognostic review

J.3.2.1 Abdominal aortic aneurysm (AAA) repair surgery

J.3.2.1.1 Anaerobic threshold (AT)

Figure 17: 30-day mortality

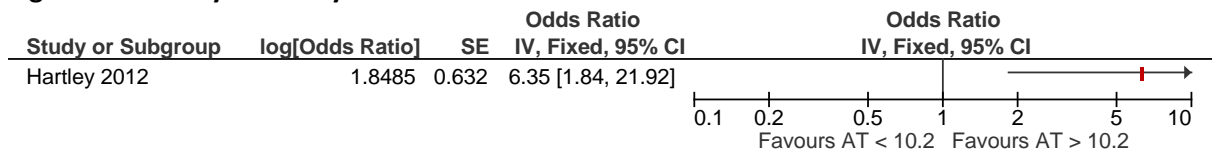


Figure 18: Survival at 35 months

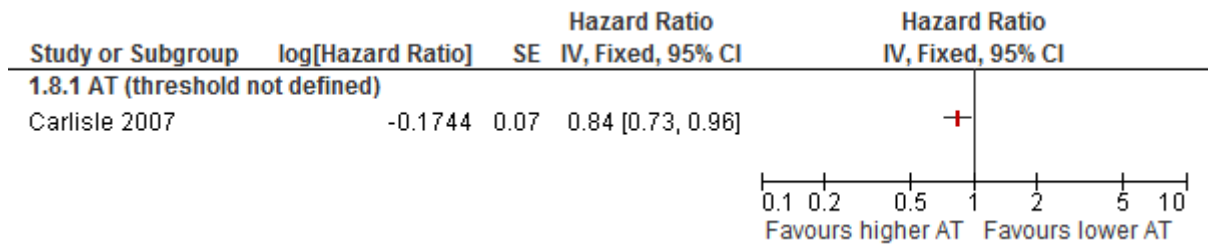


Figure 19: Cardiac complications

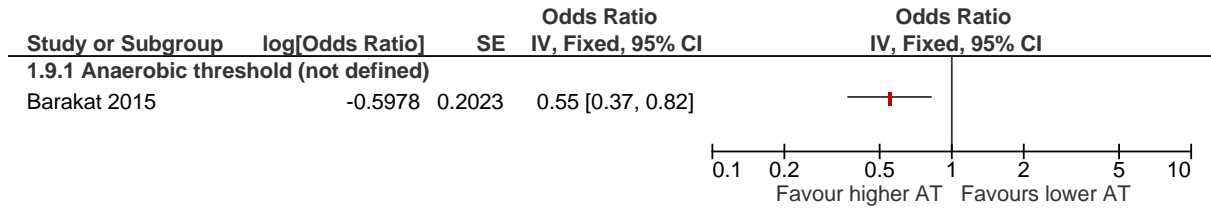


Figure 20: Respiratory complications

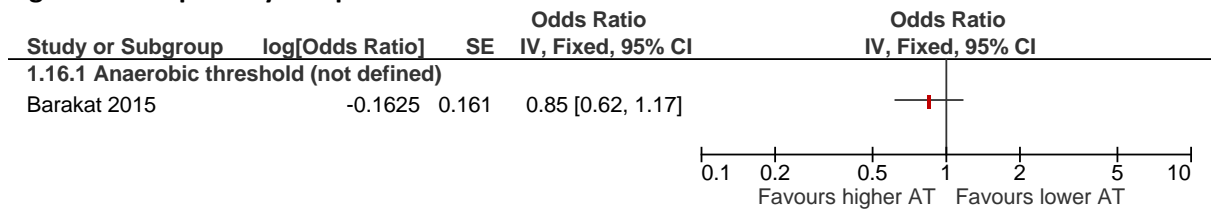
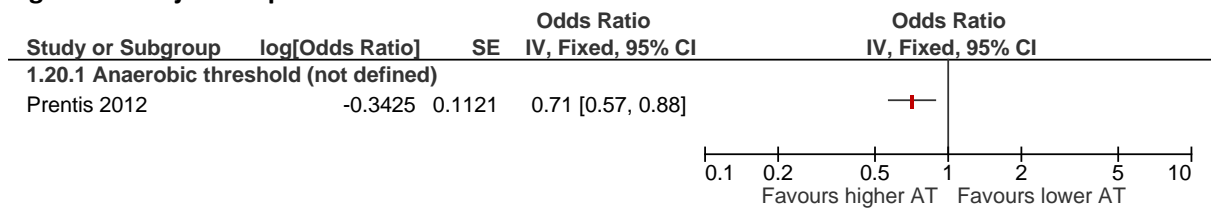


Figure 21: Major complications



J.3.2.1.2 VO₂

Figure 22: 90-day mortality

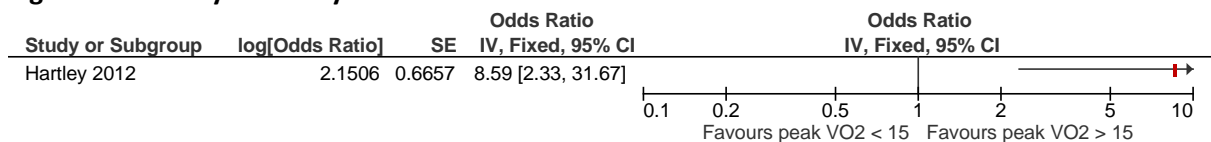


Figure 23: 3-year survival

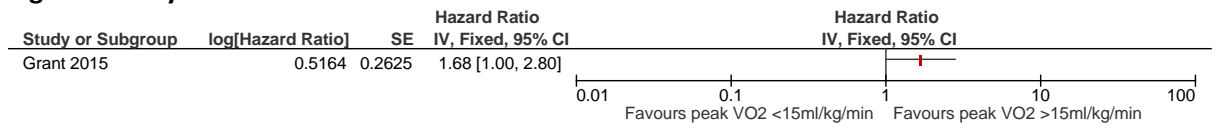


Figure 24: Cardiac complications

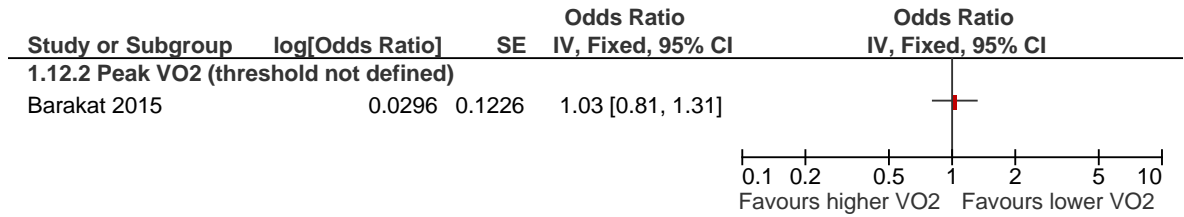
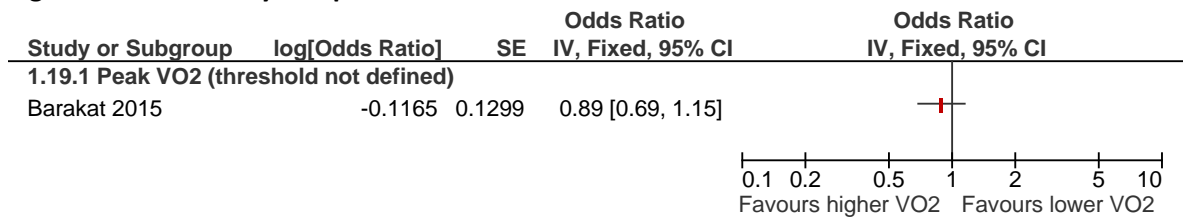


Figure 25: Pulmonary complications



J.3.2.1.3 VE/VCO₂

Figure 26: Survival at 35 months

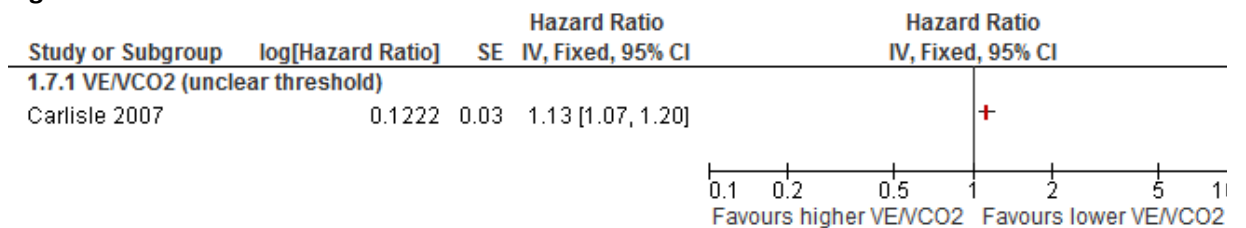


Figure 27: 3-year survival

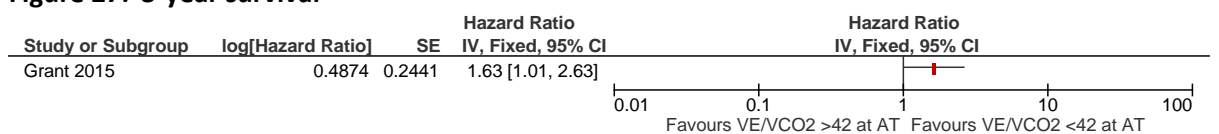


Figure 28: Cardiac complications

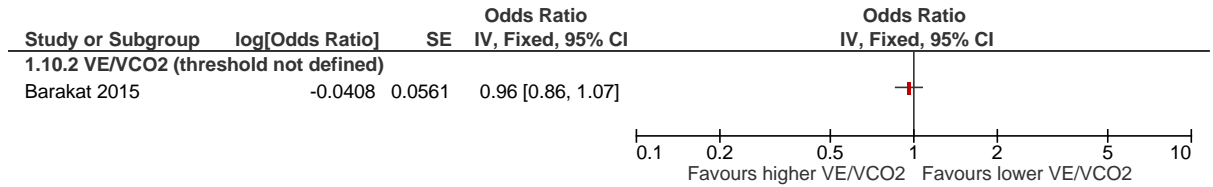
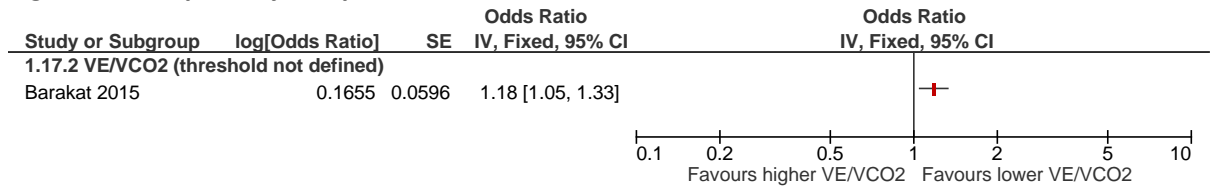


Figure 29: Respiratory complications



J.3.2.2 Lung resection surgery

J.3.2.2.1 VO₂

Complications

Figure 30: Pulmonary complications

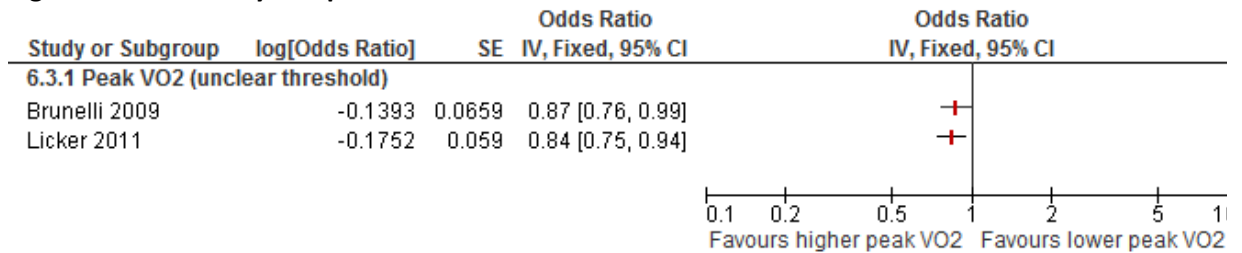


Figure 31: Cardiovascular complications

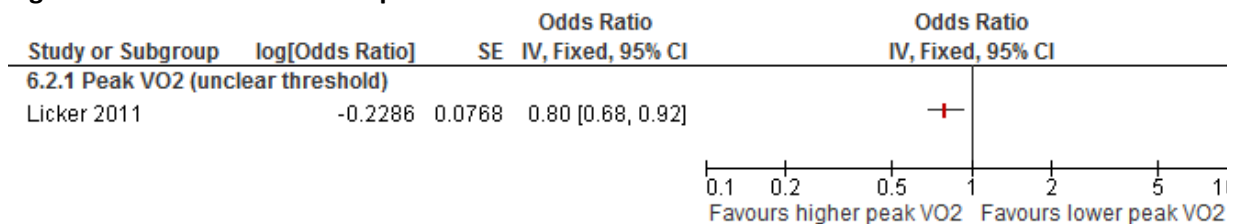


Figure 32: All complications

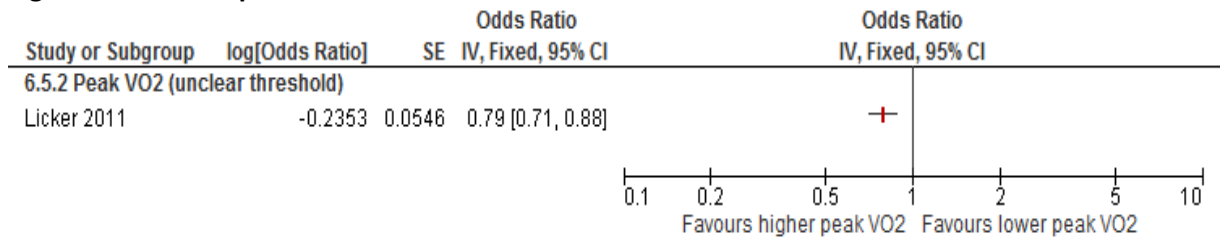
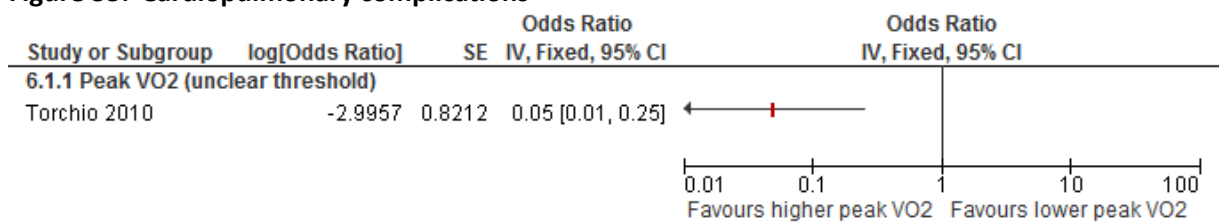


Figure 33: Cardiopulmonary complications



J.3.2.2.2 VE/VCO₂ slope

Figure 34: Respiratory complications

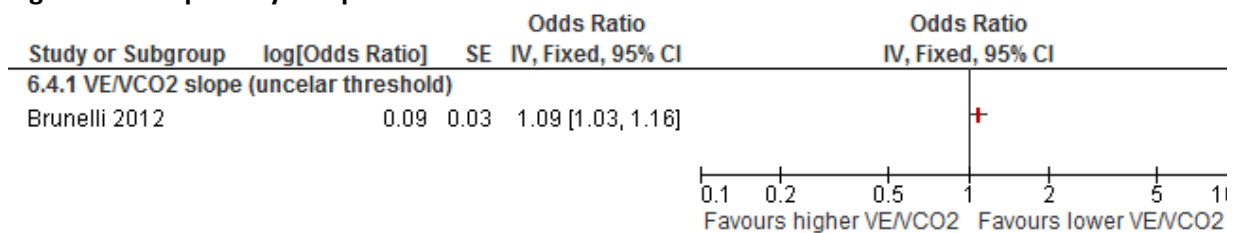
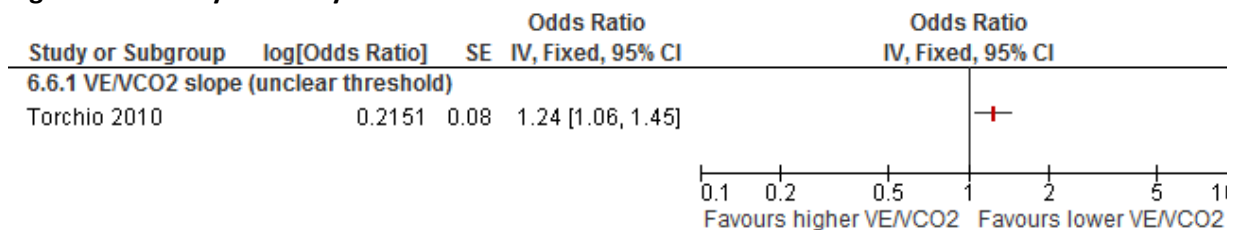


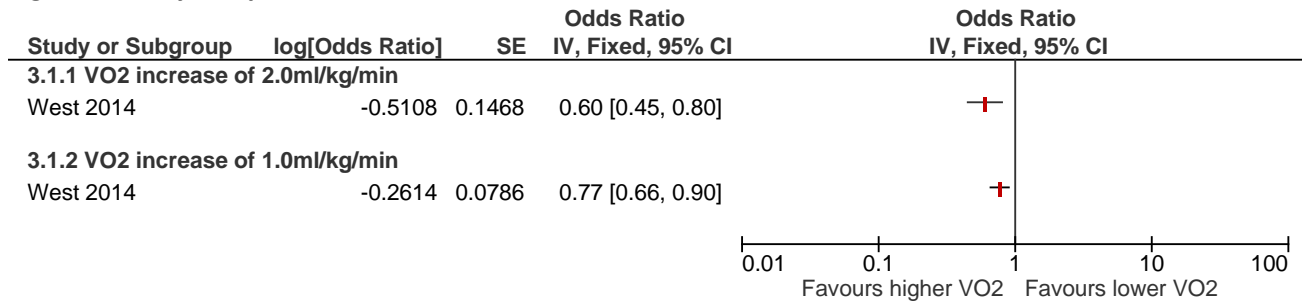
Figure 35: 30-day mortality



J.3.2.3 Major colonic surgery

Peak VO₂

Figure 36: Any complication



J.3.2.4 Pancreaticoduodenectomy

J.3.2.4.1 Anaerobic threshold

Figure 37: In hospital mortality

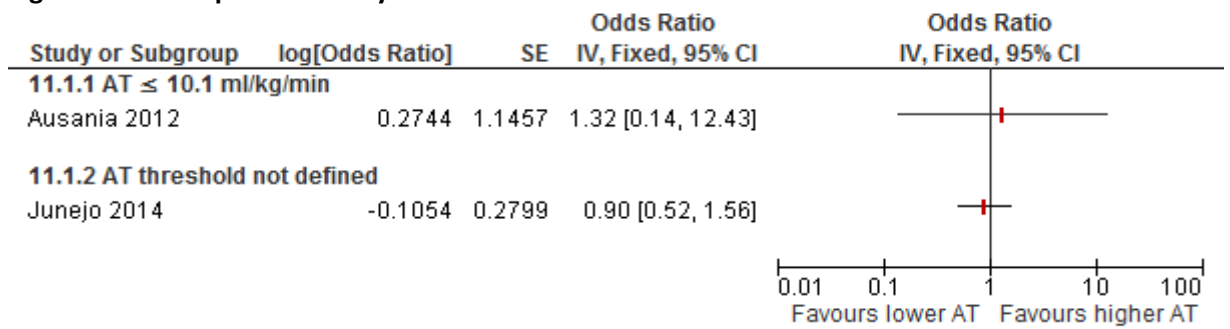


Figure 38: Cardiorespiratory complications

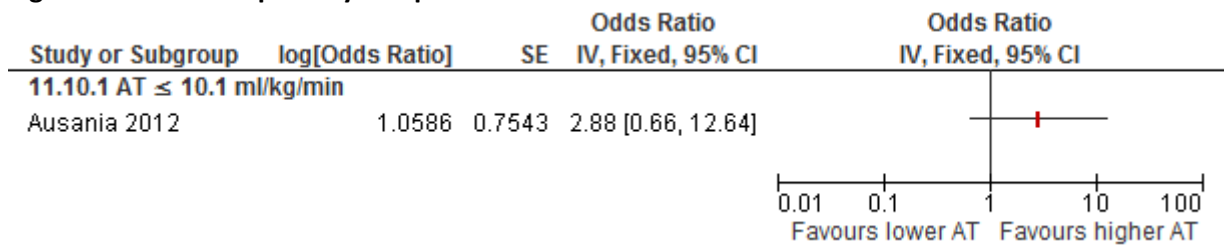


Figure 39: Cardiopulmonary complications

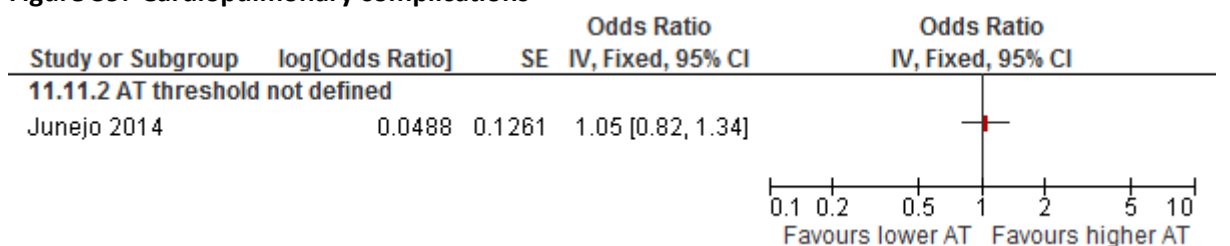


Figure 40: All complications

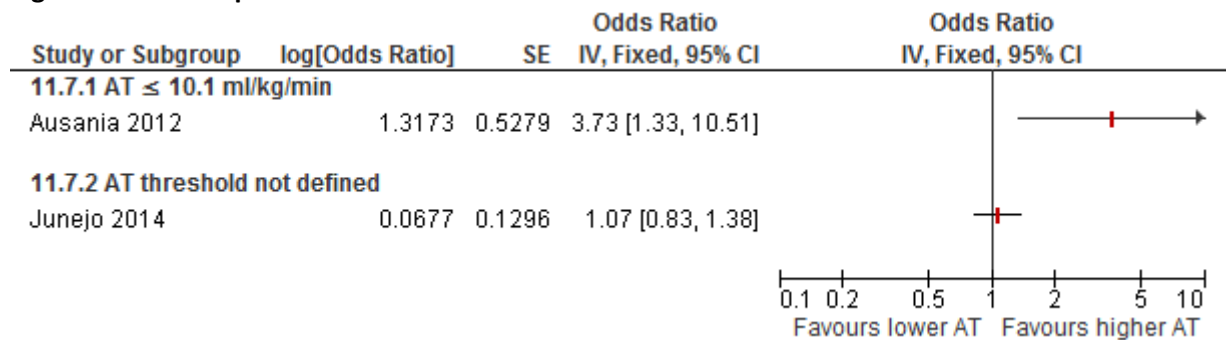
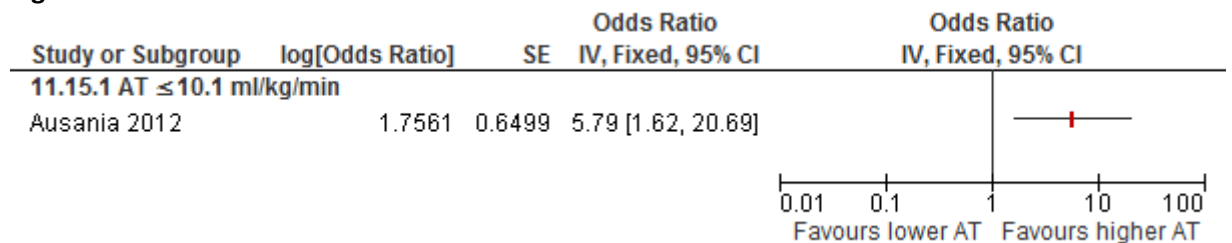


Figure 41: Pancreatic Leak



J.3.2.4.2 VO₂

Figure 42: In-hospital mortality

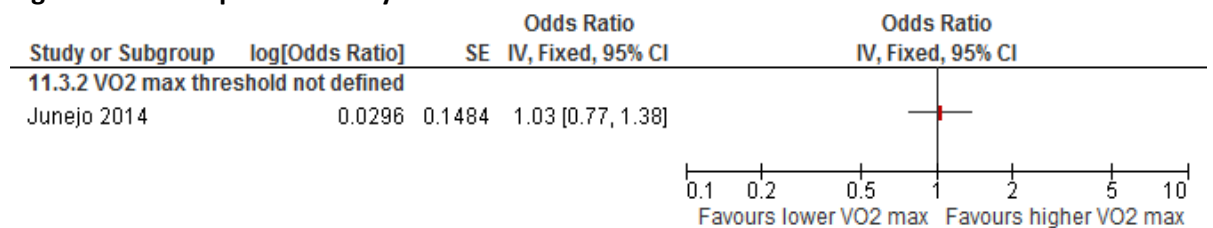


Figure 43: 30-day mortality

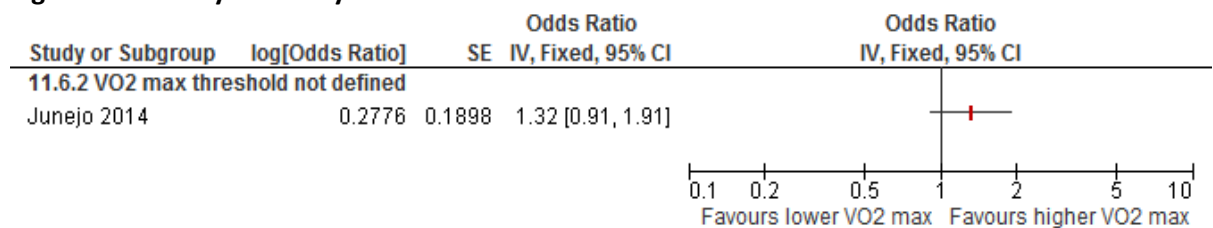
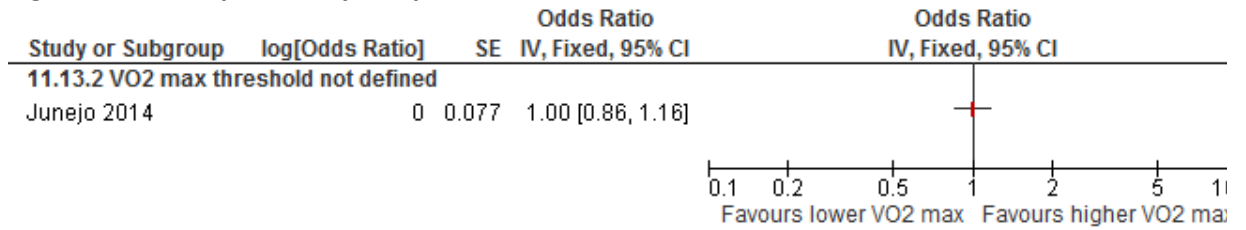


Figure 44: Cardiopulmonary complications



J.3.2.4.3 VE/VCO₂

Figure 45: 30-day mortality

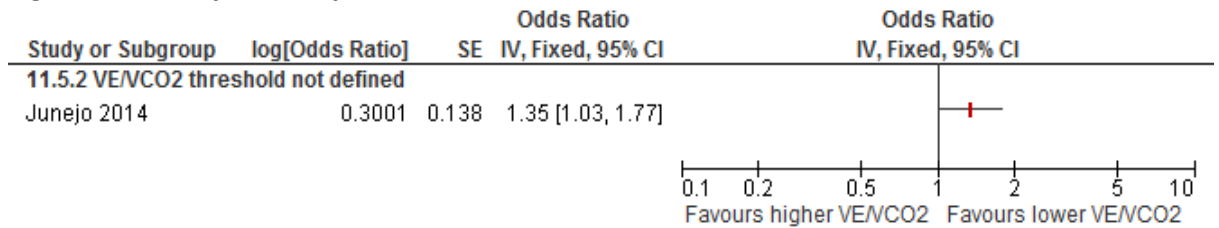


Figure 46: In hospital mortality

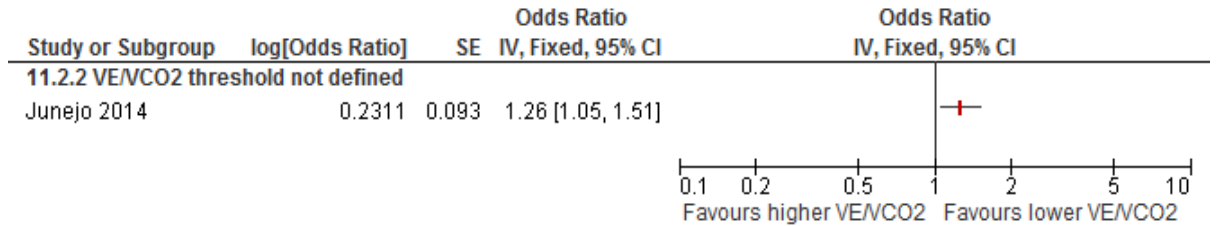


Figure 47: All complications

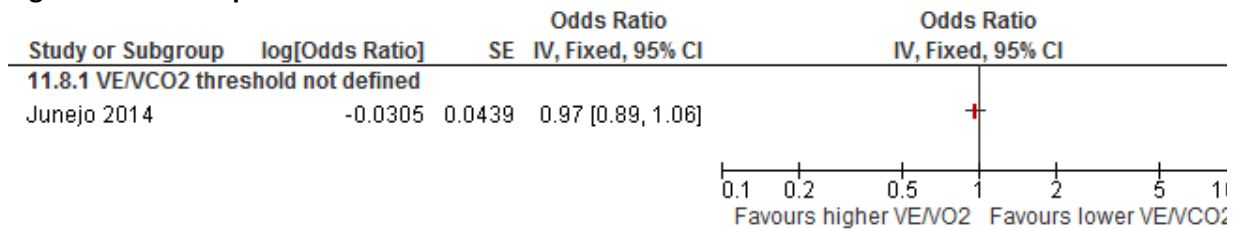
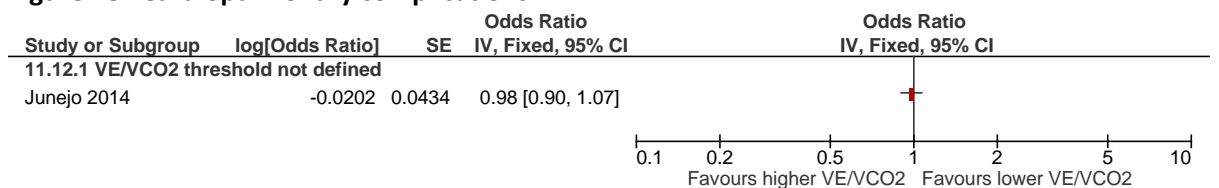


Figure 48: Cardiopulmonary complications



J.3.2.5 Other types of surgeries

J.3.2.5.1 Anaerobic threshold

Figure 49: Post-operative morbidity

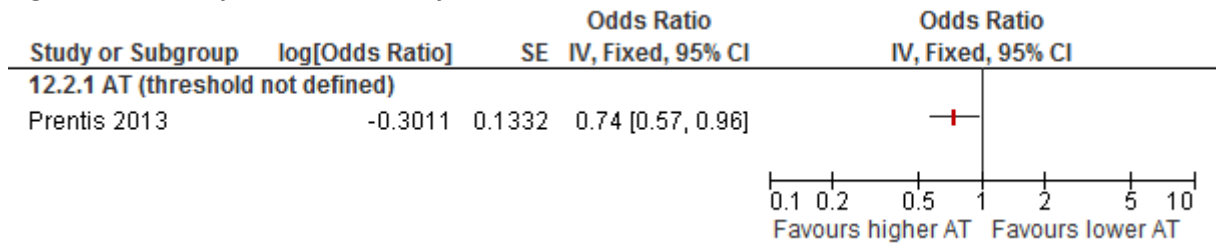


Figure 50: Any complications

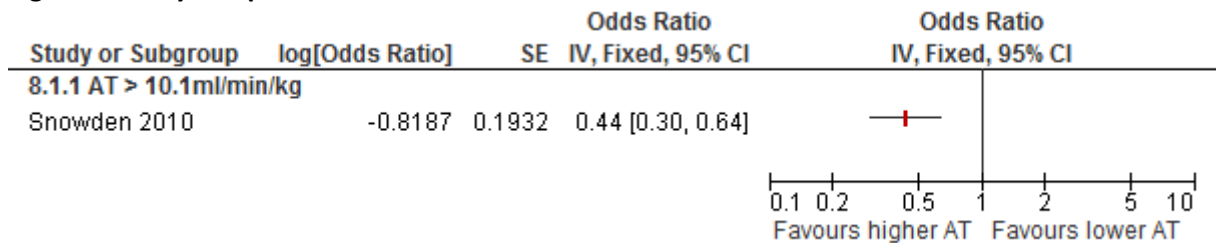
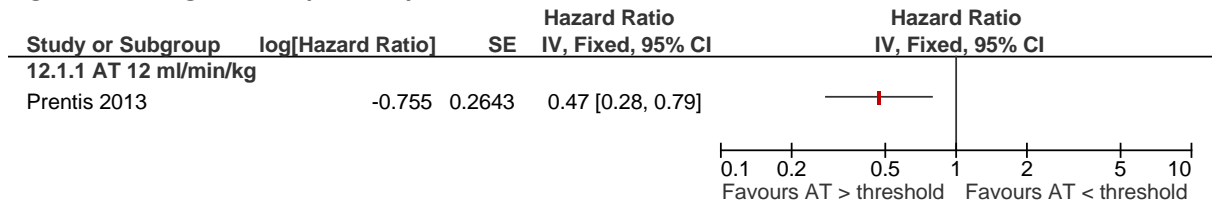
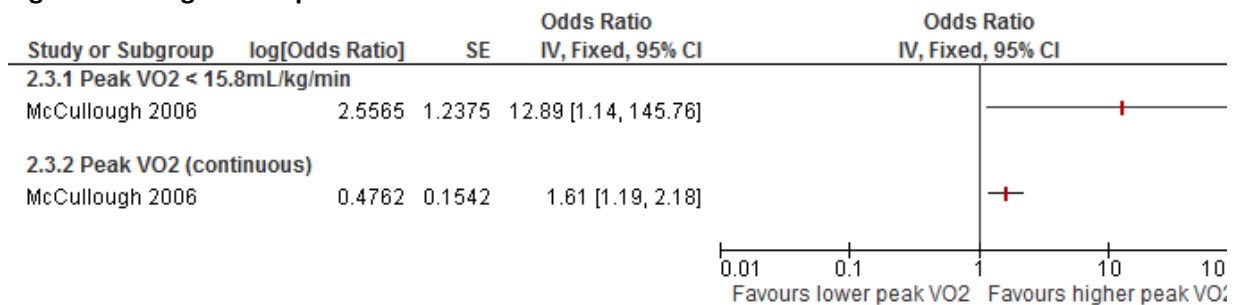


Figure 51: Length of hospital stay



J.3.2.5.2 VO₂

Figure 52: Surgical complications



J.3.2.5.3 VE/VCO₂

Figure 53: Surgical complications

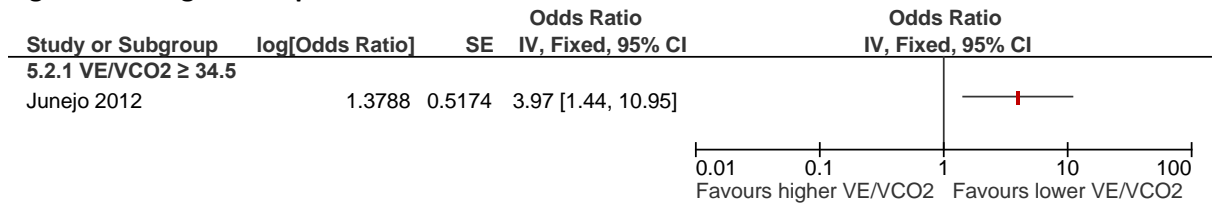
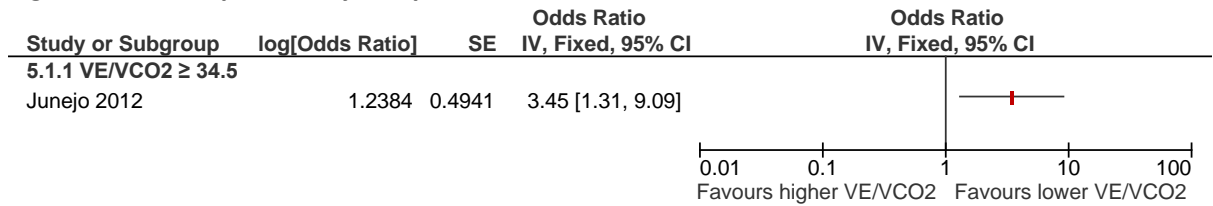


Figure 54: Cardiopulmonary complications



J.4 Polysomnography

J.4.1 Intervention evidence

Figure 55: Respiratory complications

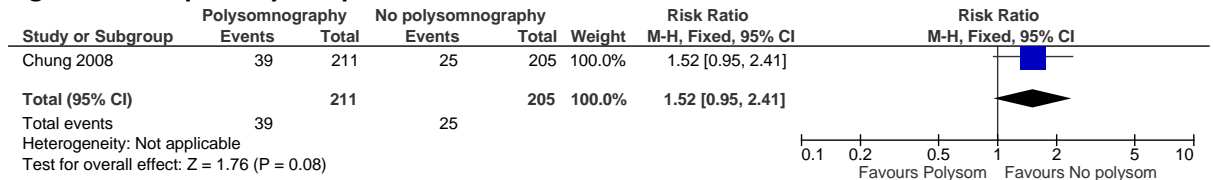


Figure 56: Cardiac complications

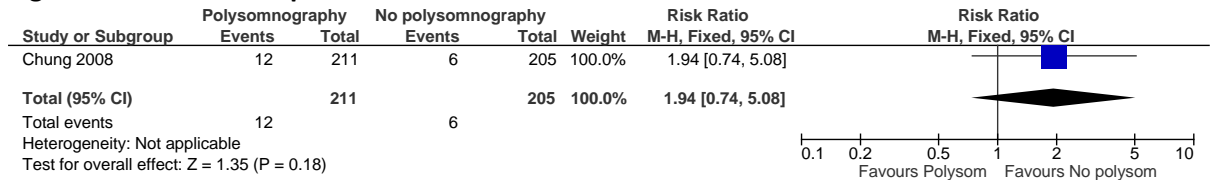


Figure 57: Neurological complications

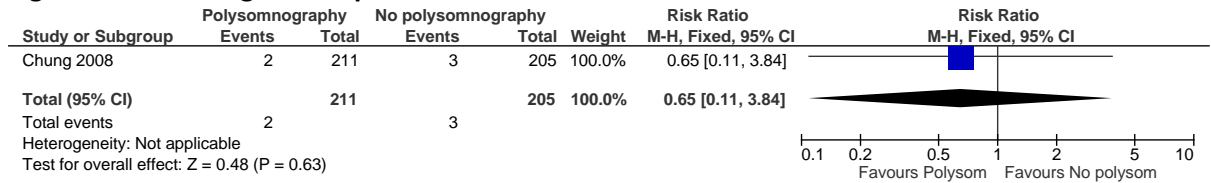


Figure 58: Unplanned ICU admission

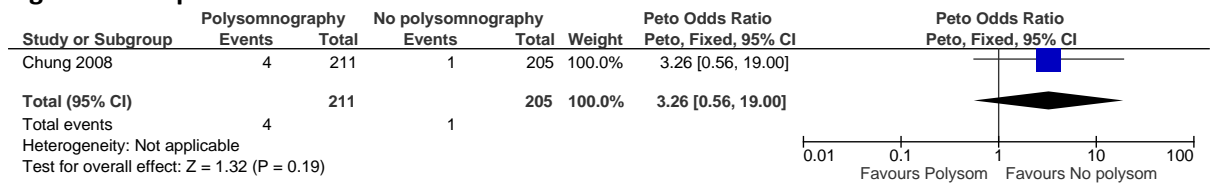
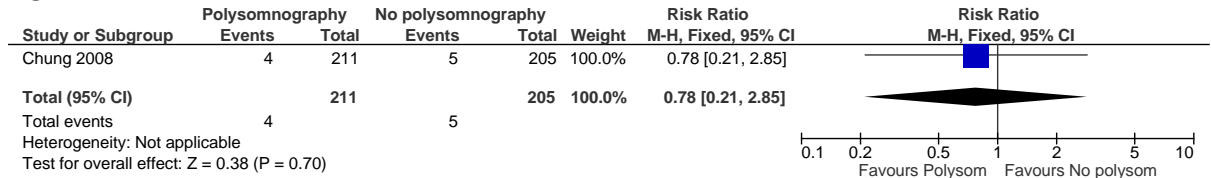


Figure 59: Re-admission to ICU



J.4.2 Prognostic evidence

Figure 60: Pulmonary complications

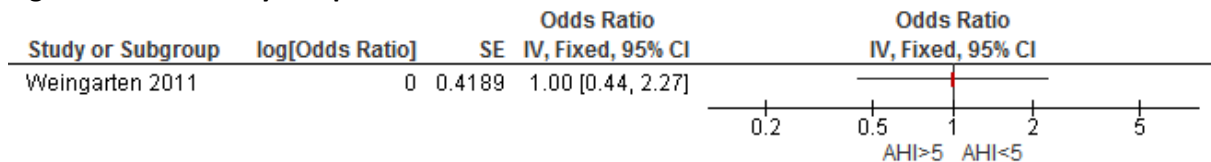


Figure 61: Surgical complications

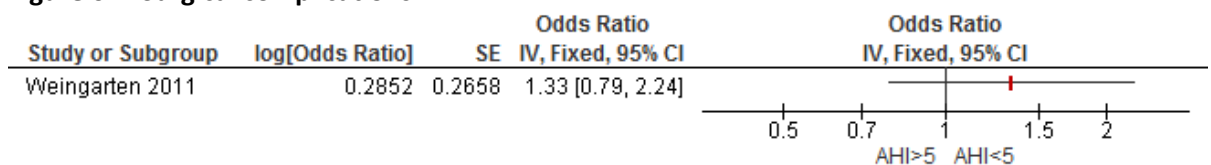


Figure 62: Other post-operative complications

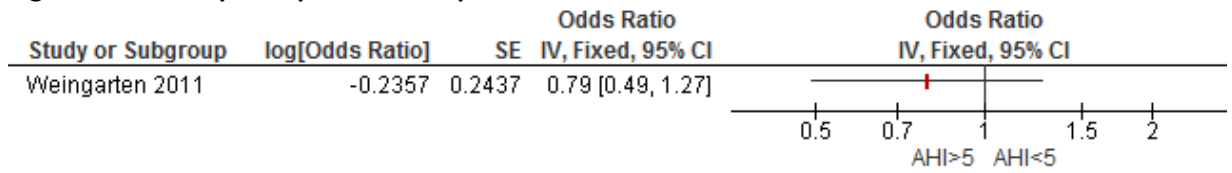
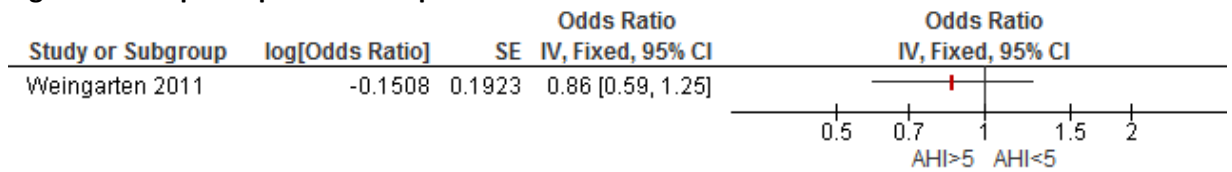


Figure 63: All post-operative complications

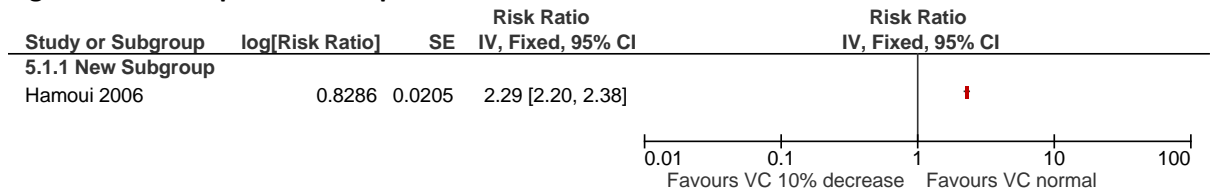


J.5 Health technology assessment update

J.5.1 Pulmonary function tests

J.5.1.1 Bariatric surgery

Figure 64: Post-operative complications



J.5.1.2 Cancer surgery

Figure 65: Post-operative surgical complications

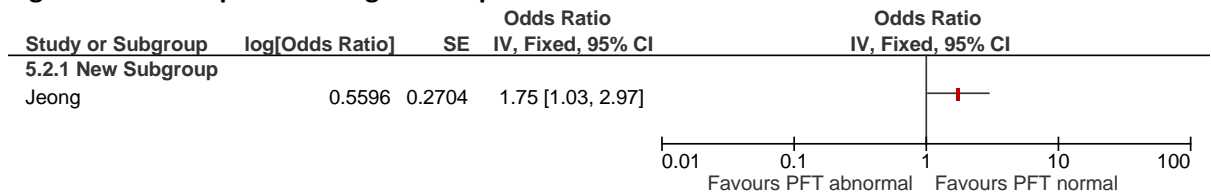
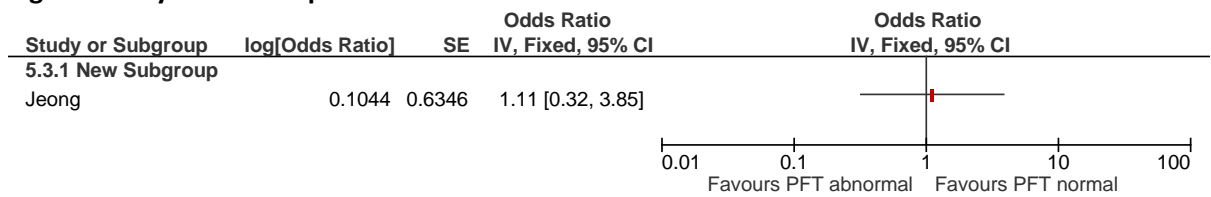


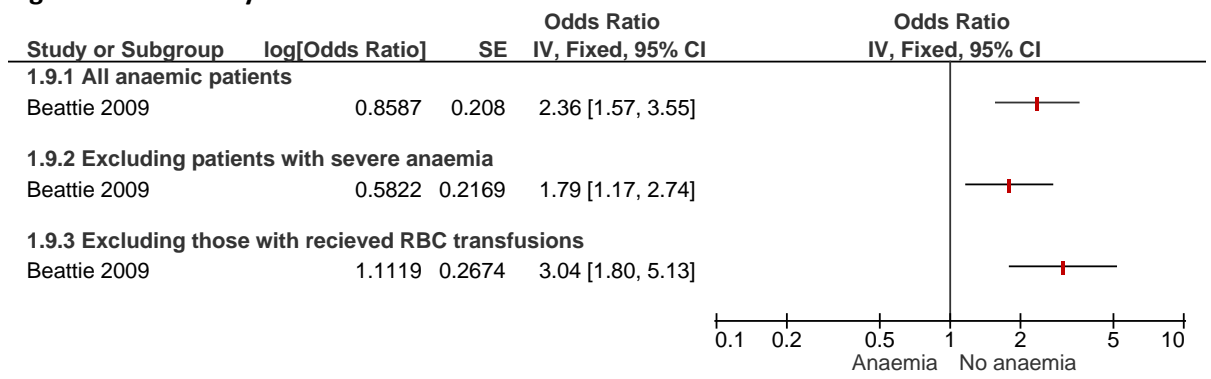
Figure 66: Systemic complication



J.5.2 Full blood count

J.5.2.1 All elective surgeries - anaemia

Figure 67: Mortality



J.5.2.2 Orthopaedic surgery – hip or knee arthroplasty

Figure 68: Red blood cell transfusion

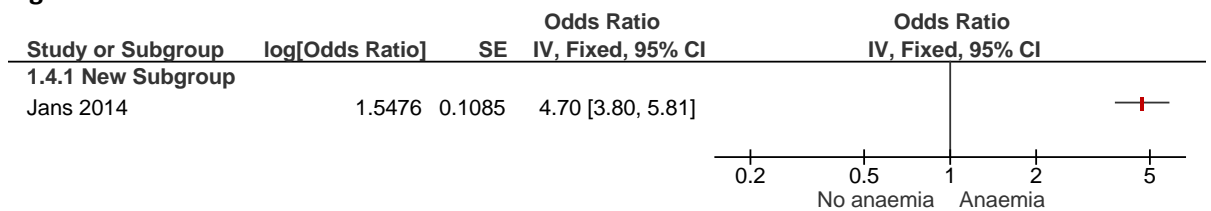


Figure 69: Allogenic blood transfusion

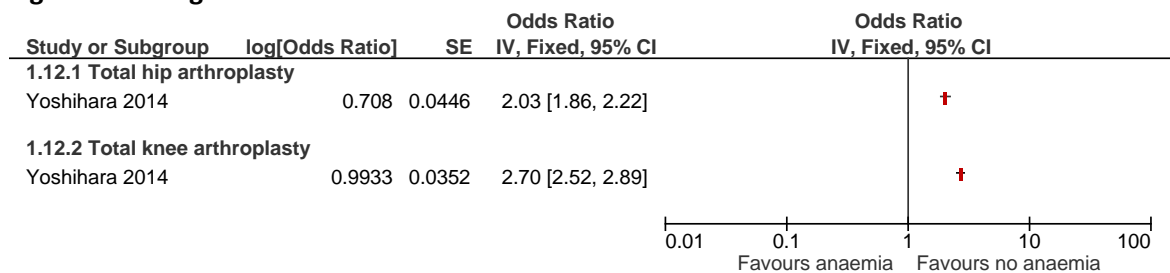


Figure 70: Increased length of stay ≥5 days

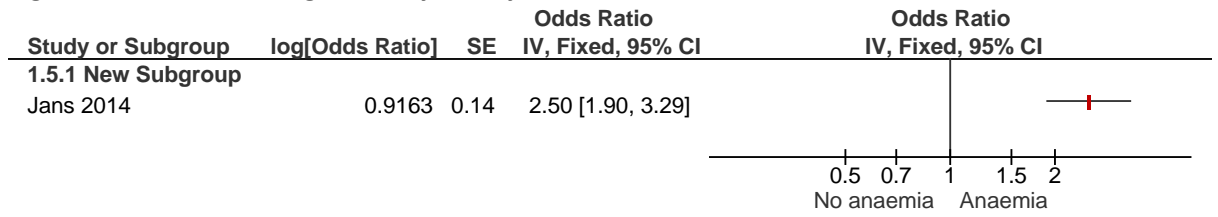


Figure 71: Readmission 90 days after surgery

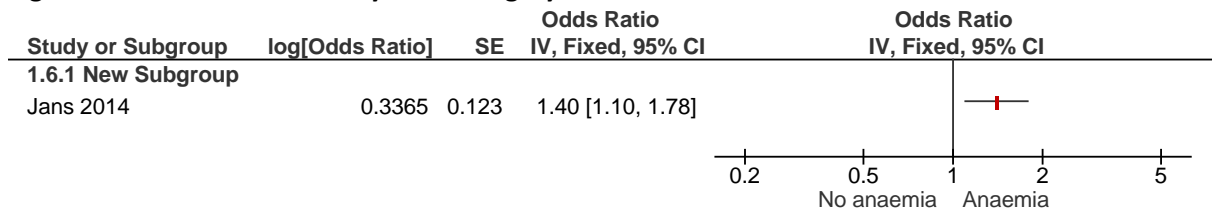


Figure 72: Joint infection

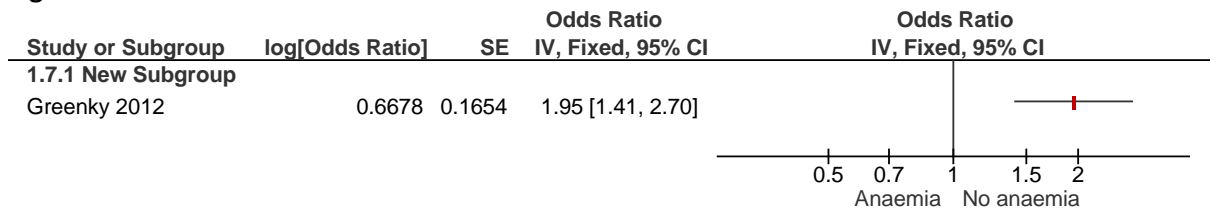


Figure 73: Mortality

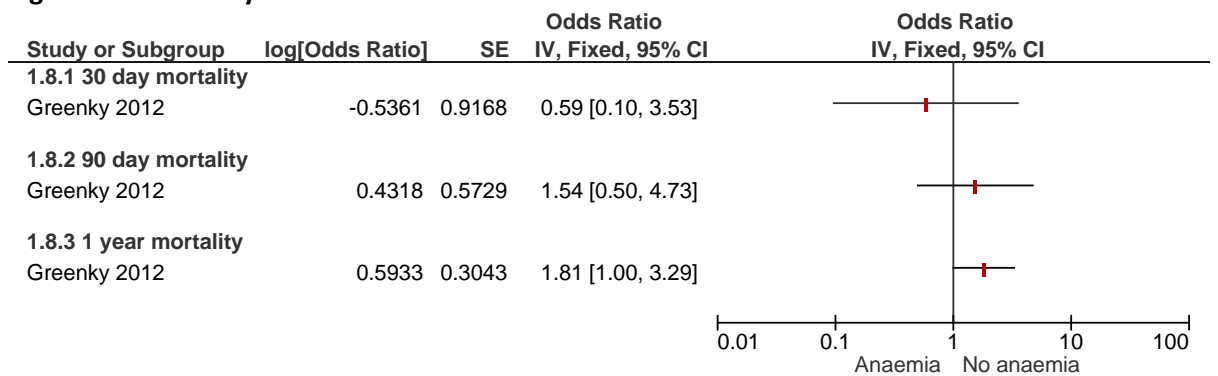


Figure 74: Hyperglycaemia

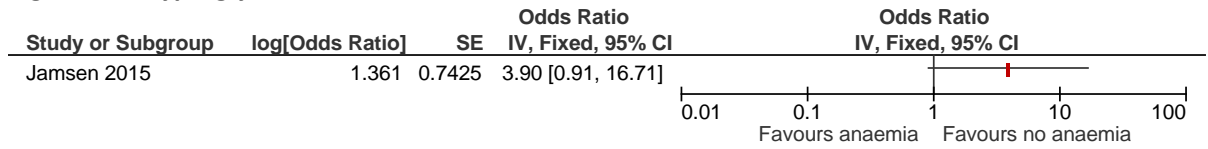
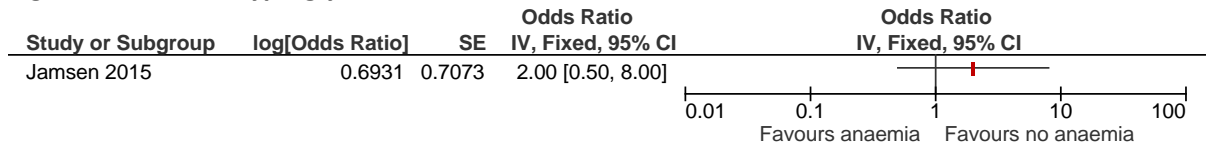
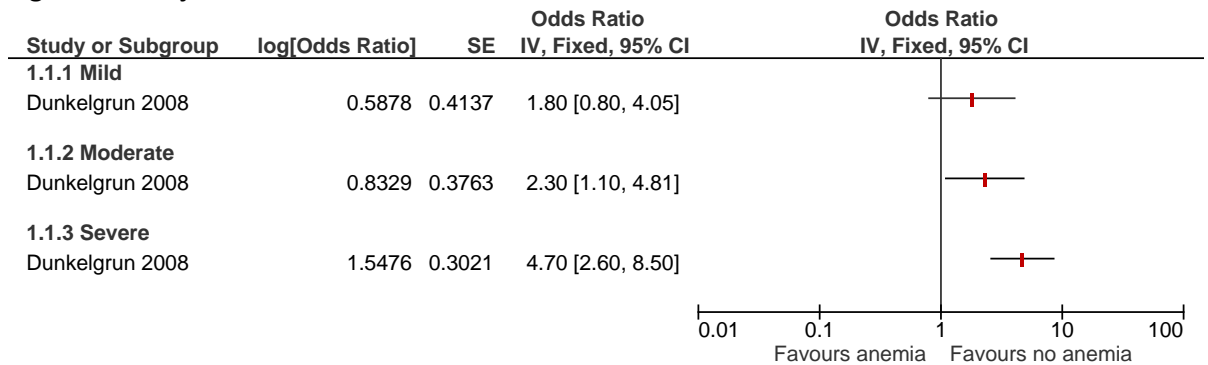


Figure 75: Severe Hyperglycaemia



J.5.2.3 Vascular surgery - anaemia

Figure 76: Major adverse cardiac event



J.5.2.4 Vascular surgery – white blood cell count

Figure 77: Surgical complications

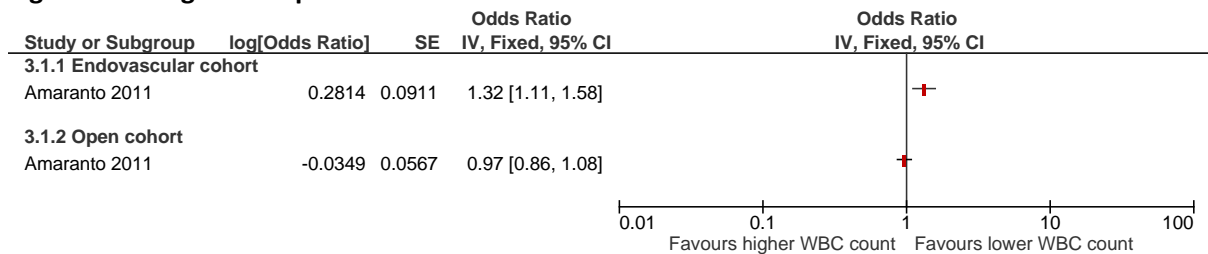


Figure 78: Major adverse events

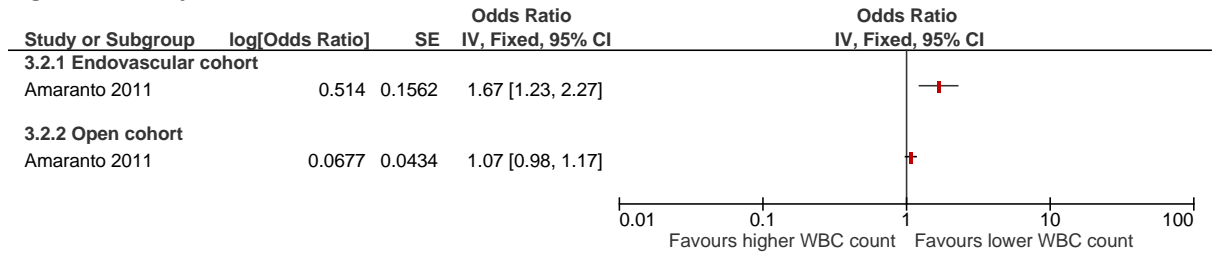
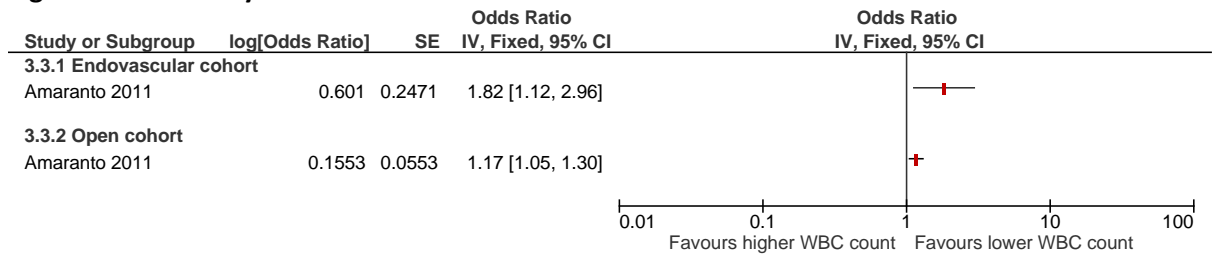
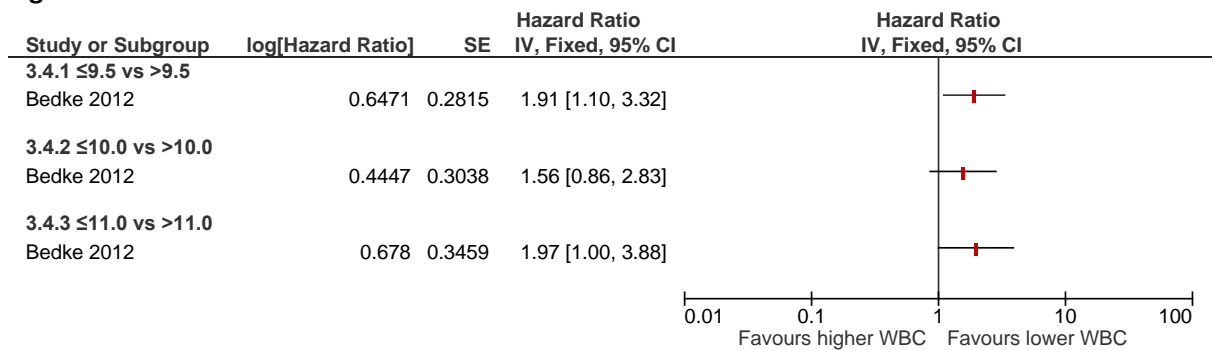


Figure 79: Mortality



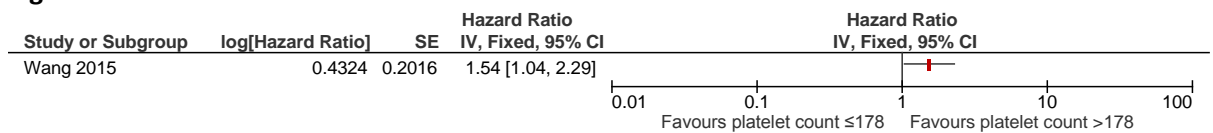
J.5.2.5 Cancer surgery – White blood cell count

Figure 80: Survival



J.5.2.6 Cancer surgery – Platelet count

Figure 81: Survival



J.5.2.7 Non-cardiac surgery - platelet count

Figure 82: Blood transfusion

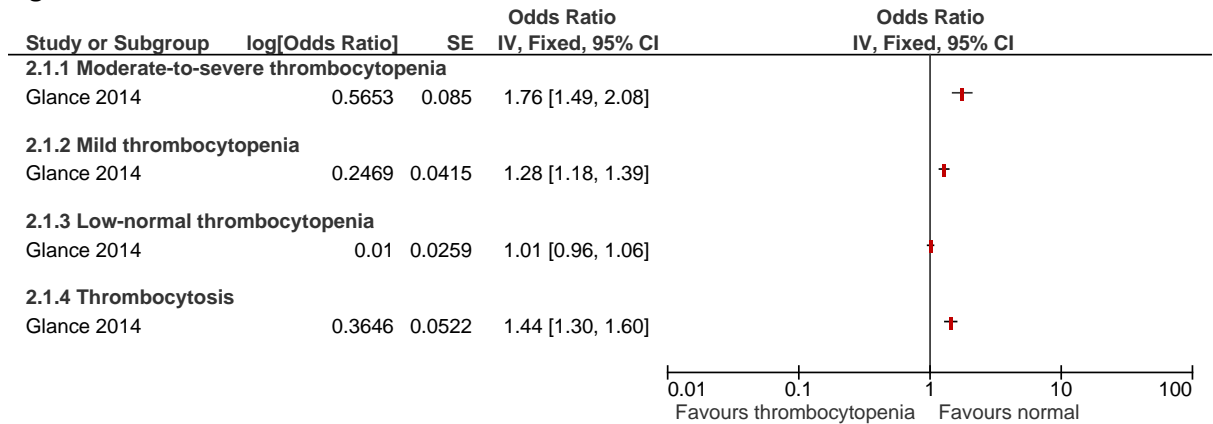


Figure 83: Mortality

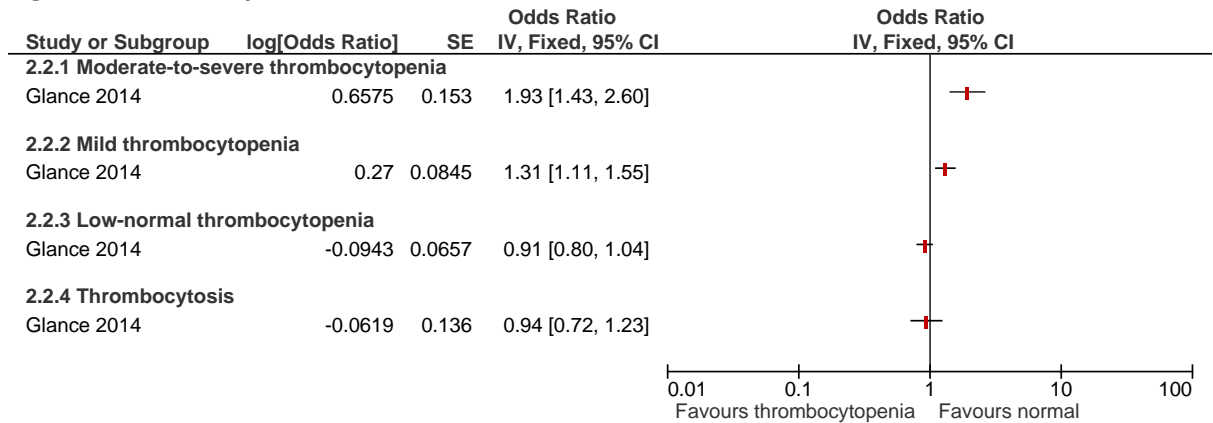


Figure 84: Mortality or major complication

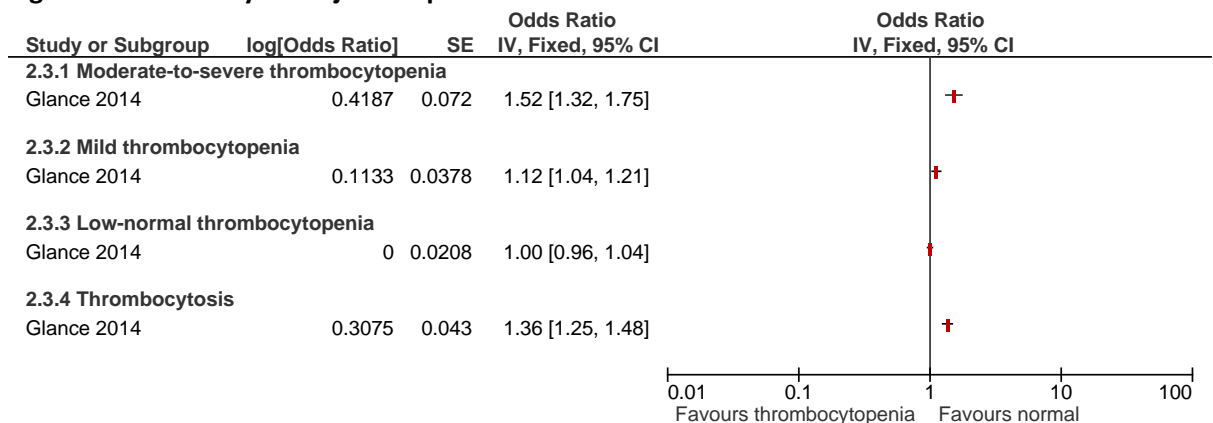


Figure 85: Cardiac complication

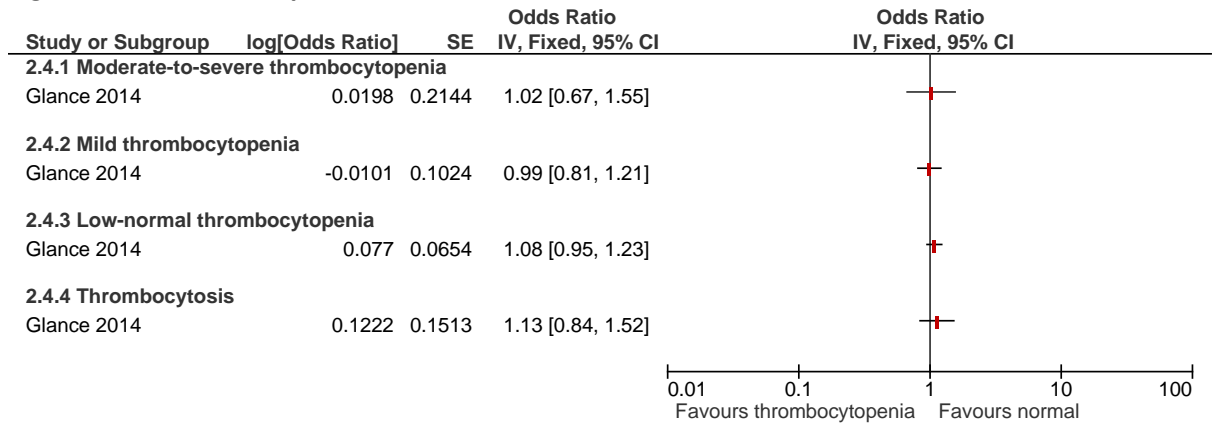


Figure 86: Pulmonary complication

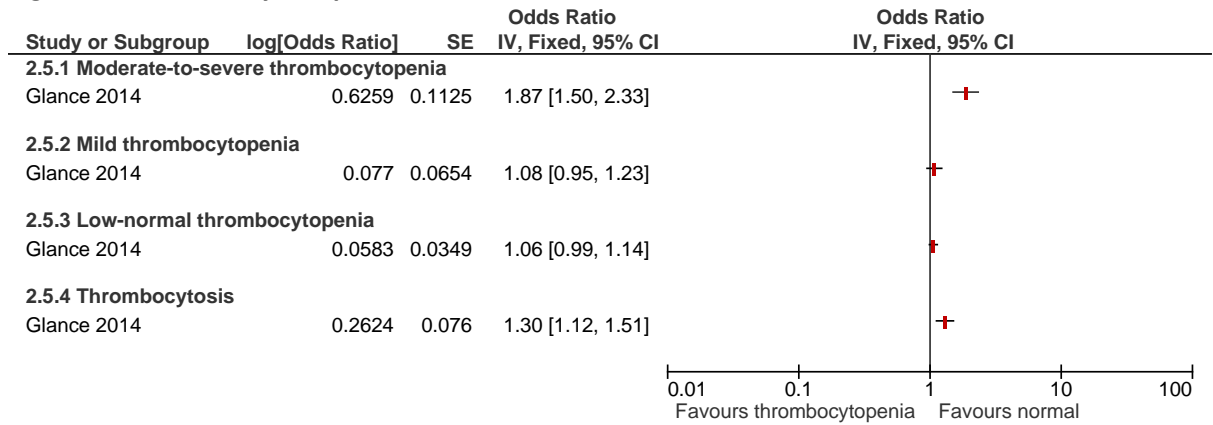


Figure 87: Renal complication

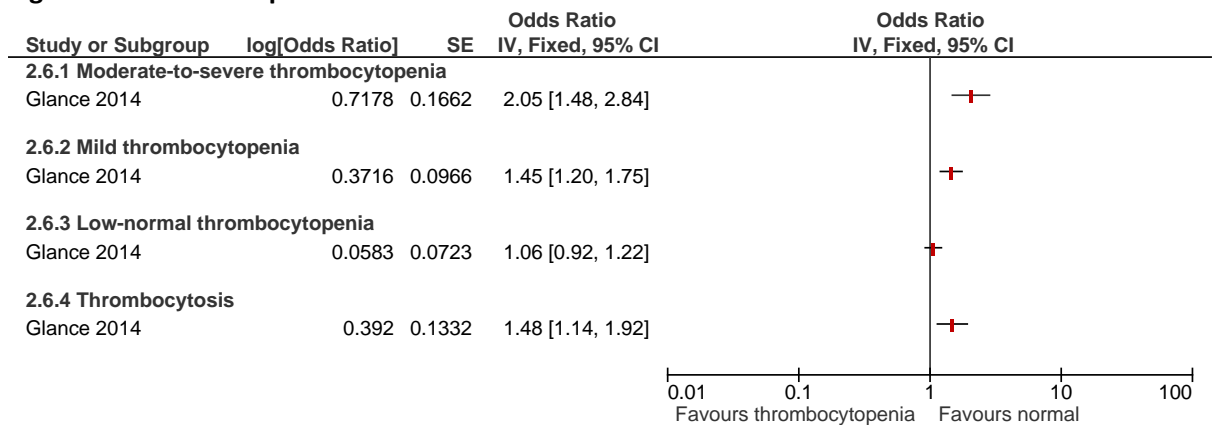


Figure 88: CNS complication

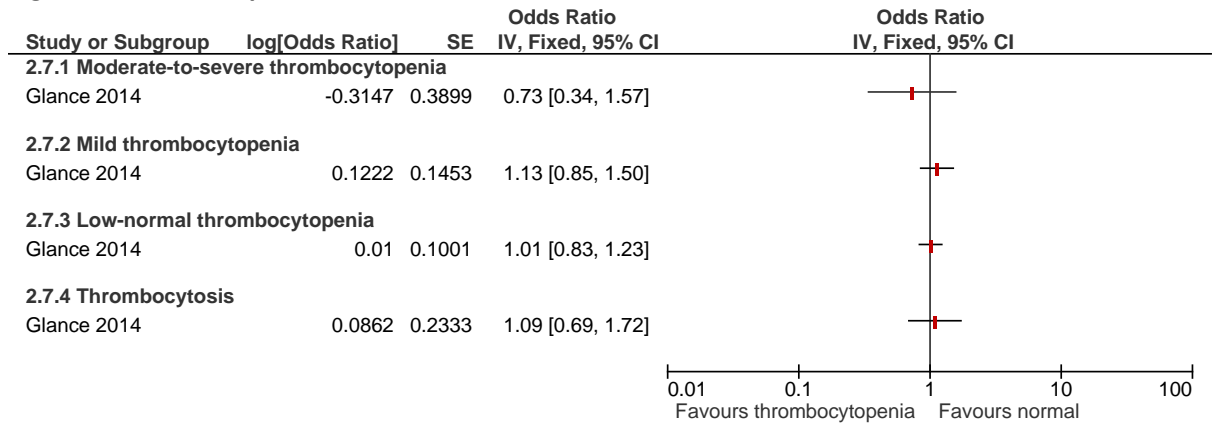


Figure 89: Sepsis complication

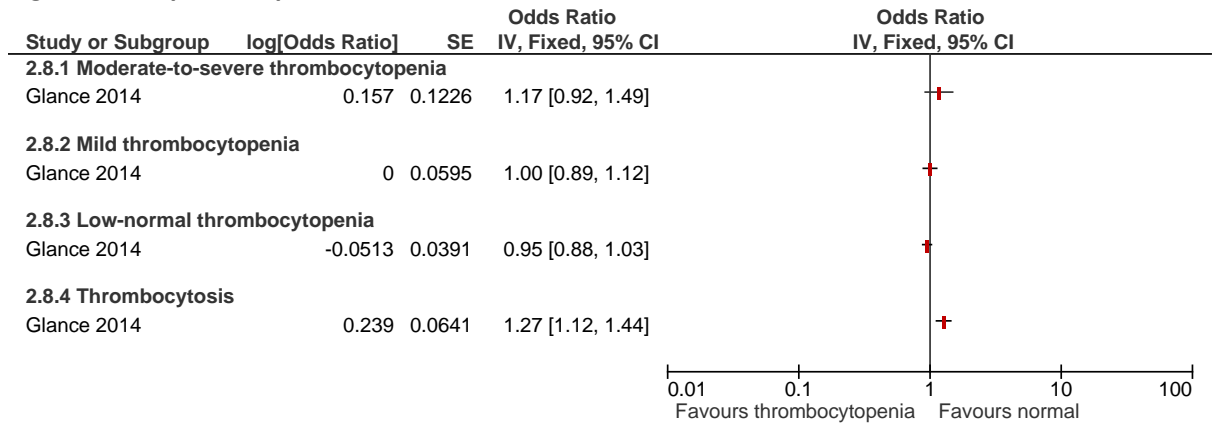


Figure 90: Wound complication

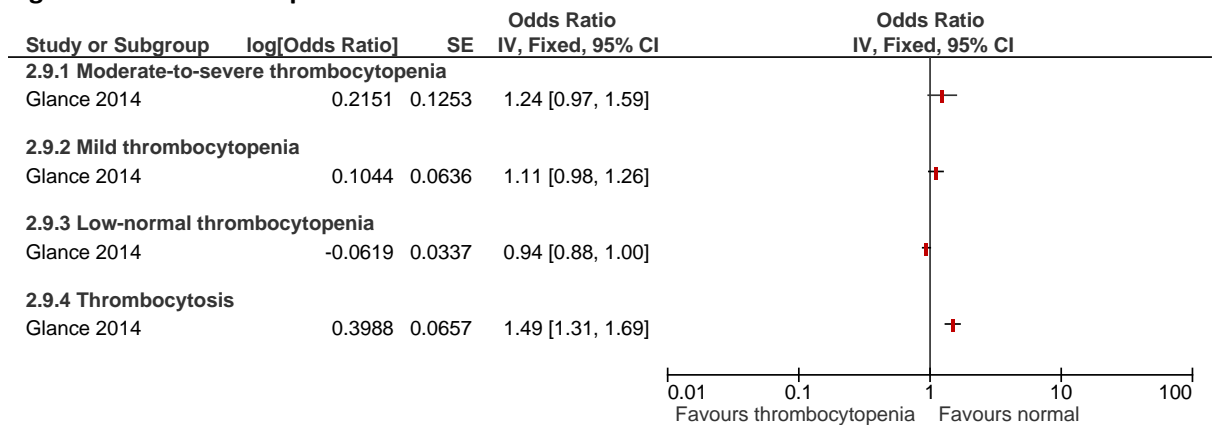


Figure 91: Thromboembolic complication

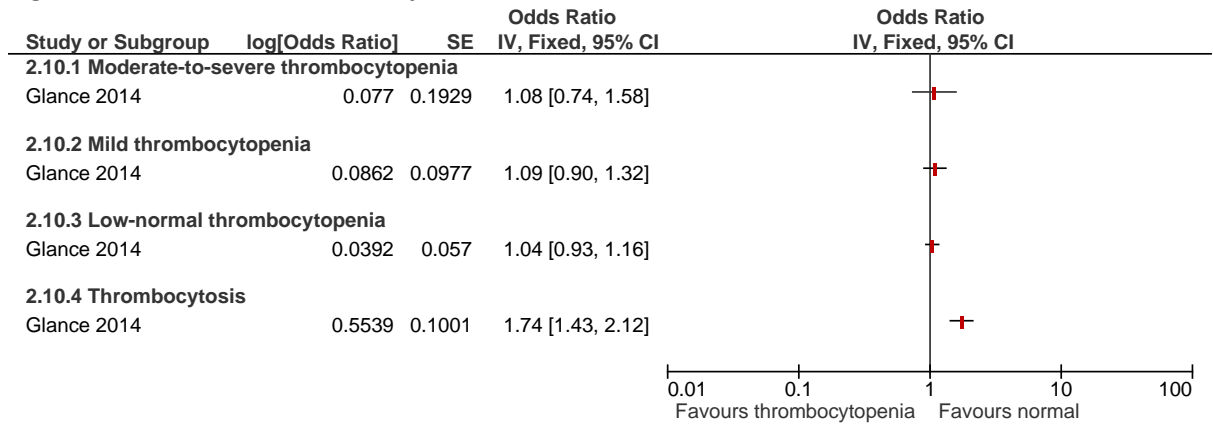
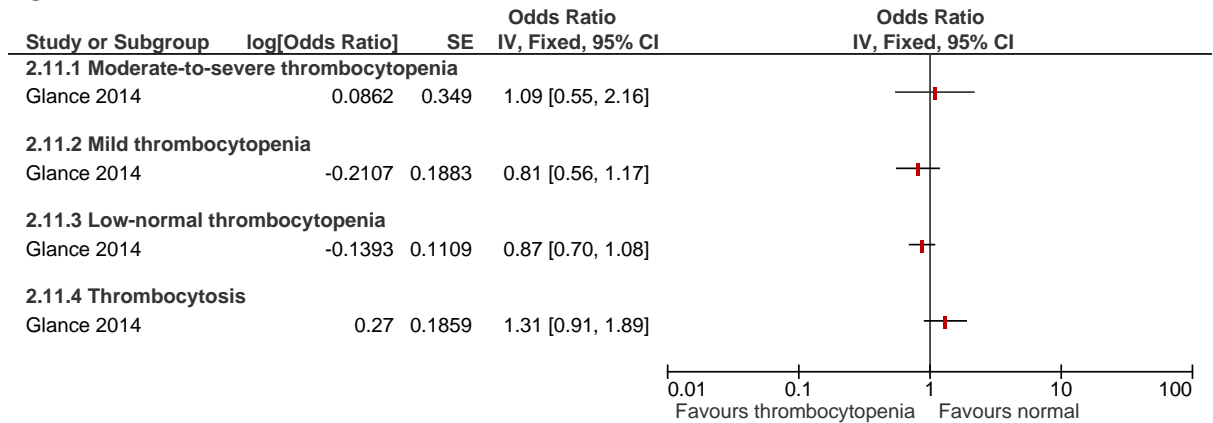


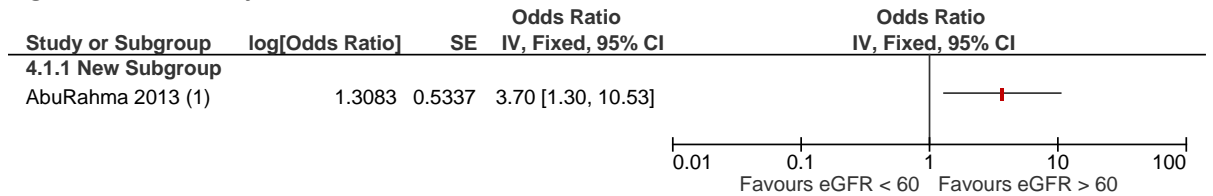
Figure 92: Graft failure



J.5.3 Kidney function tests (urea and electrolytes)

J.5.3.1 Vascular surgery- eGFR

Figure 93: Mortality or stroke



Footnotes

(1) eGFR value refers to a cut off of 60 ml/min/1.73m²

J.5.3.2 Endovascular repair of abdominal aortic aneurysm- eGFR

Figure 94: Perioperative mortality

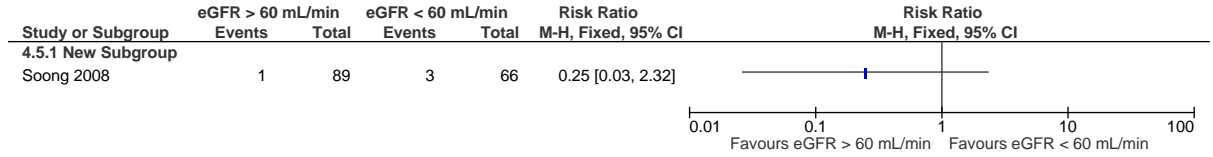
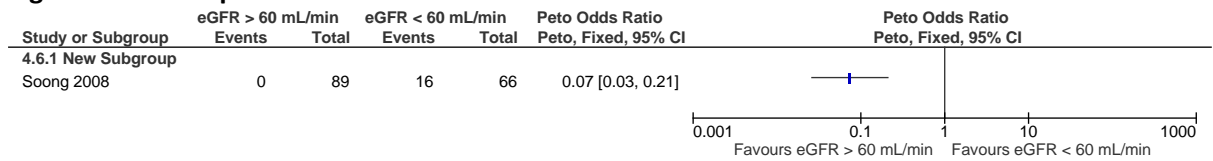


Figure 95: Post-operative renal failure



J.5.3.3 Non-cardiac surgery -eGFR

Figure 96: Mortality

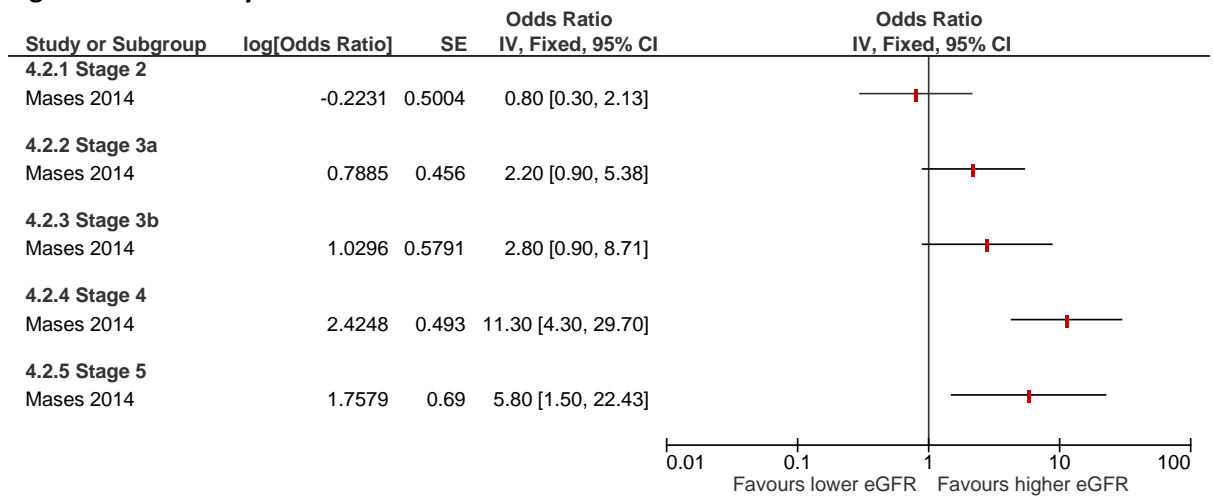
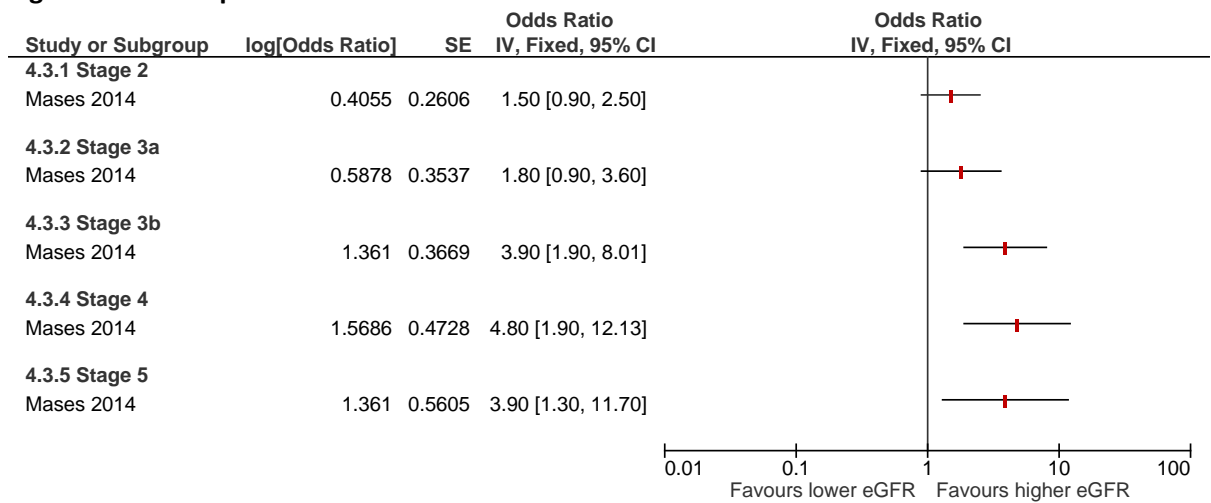


Figure 97: Post-operative MACE

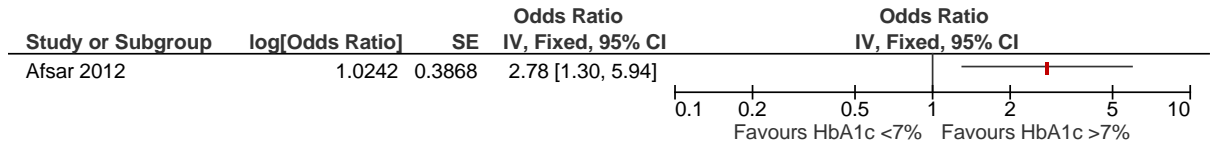


J.6 Glycated haemoglobin test

J.6.1 Diagnosed diabetes

J.6.1.1 Primary arteriovenous fistula failure

Figure 98: Post-operative complications



J.6.1.2 Hip/ joint arthroplasty

Figure 99: Periprosthetic joint infection

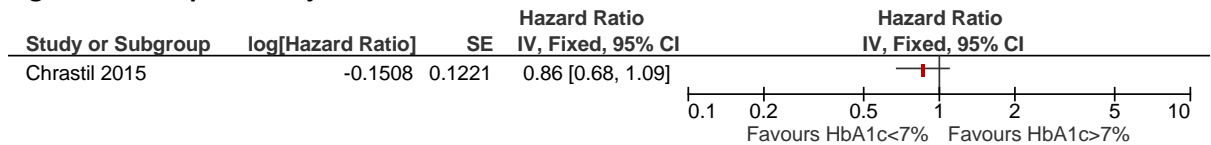
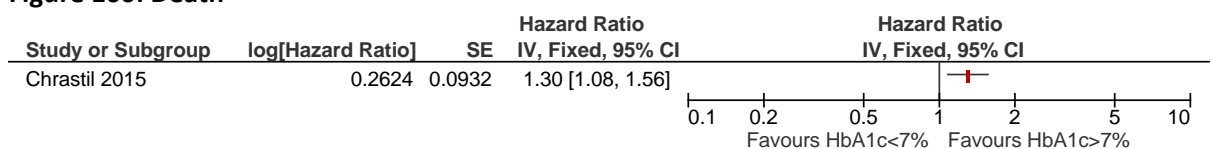
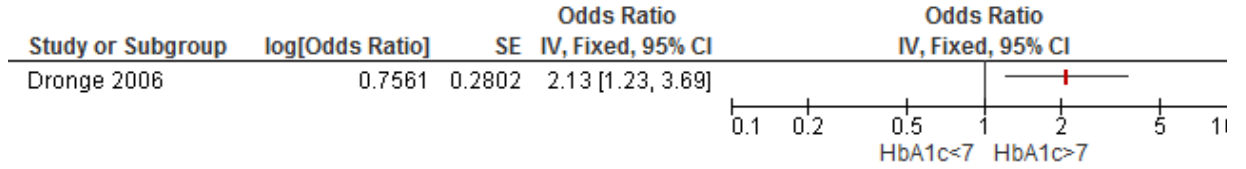


Figure 100: Death



J.6.1.3 Non-cardiac surgery

Figure 101: Infections complications



J.6.1.4 Joint arthroplasty

Figure 102: 90-day mortality

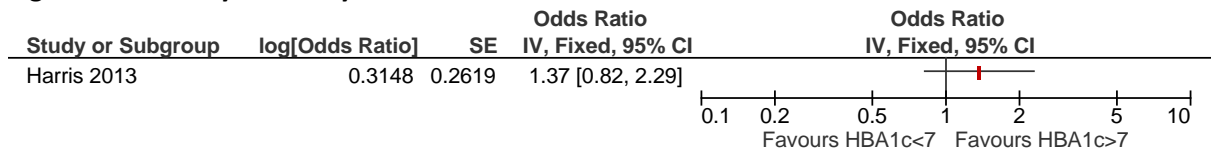


Figure 103: Number of complications

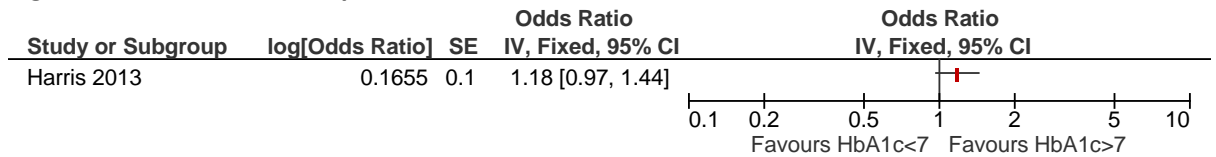
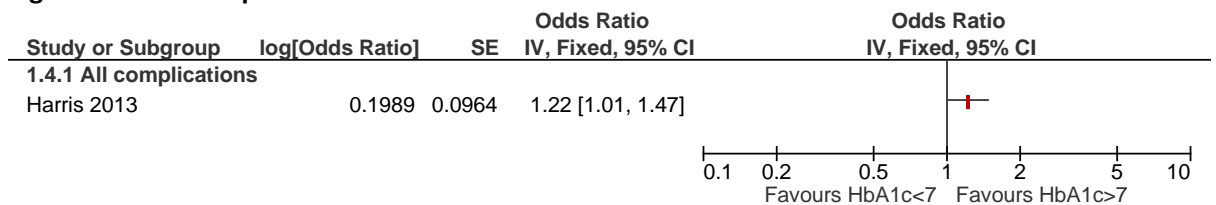


Figure 104: All complications



J.6.2 Undiagnosed diabetes

J.6.2.1 Colorectal surgery

Figure 105: Surgical complications

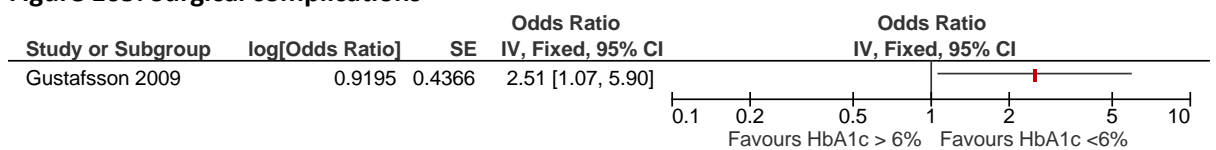


Figure 106: Infection

