CPR in obese patients: data tables

Author, Year, Country	Aim Study Design	Population	Outcomes reported
PAEDIATRIC STUDIES			
Meert et al. 2016 United States of America	Investigate relationships between cardiac arrest characteristics, and survival and neurobehavioral outcome among children recruited to the Therapeutic Hypothermia after Pediatric Cardiac Arrest Out-of-Hospital (THAPCA-OH) trial. Secondary analysis of data from randomised controlled trial	Children >2 days and <18 years) with OHCA (n=295) and received TTM	Neurological outcome: 12-months
Srinivasan et al. 2010 United States of America	Evaluate association between obesity and outcomes among children after IHCA Retrospective registry study	Patients (<18 years) with IHCA from January 2000 to July 2004 (n=1,268)	Favourable neurologic outcome: hospital discharge Survival: hospital discharge ROSC >20 minutes
ADULT STUDIES			
Aoki et al. 2023 Japan	Assess association between BMI and neurological outcomes in OHCA Prospective, multicenter, observational study	Adult patients OHCA aged 16–64 years hospitalised after resuscitation (n=637)	Neurological outcome: 30 days Survival: 30-days
Aoki et al. 2018 Japan	Assess association between BMI and neurological outcomes in OHCA Prospective, multicenter, observational study	Adult patients (>18 years) with OHCA hospitalised after resuscitation (n=1,326)	Neurological outcome: 1-month
Beckett et al. 2017 United Kingdom	Describe incidence, risks, management and outcomes of cardiac arrest in pregnancy in the UK population Prospective, descriptive study	66 women who received BLS in pregnancy (OHCA and IHCA) (n=66)	Survival: hospital discharge
Breathett et al. 2016 Unites States of America	Hypothesized that BMI ≥30 is associated with higher risk of mortality than BMI <30 after therapeutic hypothermia for cardiac arrest Retrospective cohort study	Adults who underwent therapeutic hypothermia following resuscitation (n=164) CA location not reported	Survival: hospital discharge
Bunch et al. 2008 United States of America	Investigated outcomes of OHCA based on body weight Retrospective cohort study	Adults (not defined) with atraumatic OHCA transferred to a single receiving hospital (n=213)	Neurological outcome: hospital discharge Survival: 5 years
Chavda et al. 2022 Australia	Estimate conditional and causal effects of obesity on mortality in cardiac arrest patients Retrospective cohort study	Adult ICU patients (>16 years) admitted with cardiac arrest (OHCA and IHCA) (n=13,970)	Survival: hospital discharge
Chavda et al. 2020 Australia	Explore association between obesity and outcome in patients following cardiac arrest Retrospective cohort study	Adult ICU patients (age not defined) admitted with cardiac arrest (IHCA and OHCA) with BMI data (n=112)	Survival: hospital discharge
Chen et al. 2021 China	Determine impact of BMI on clinical outcomes in OHCA survivors treated with TTM Retrospective cohort study	Adult OHCA survivors who received TTM (n=261)	Neurological outcome: hospital discharge Survival to hospital discharge
Czapla et al. 2023 Poland	Determine sex differences in prognostic impact of BMI on in hospital mortality in sudden cardiac arrest survivors. Retrospective cohort study	Adults (>18 years) admitted to ICU 2017 and 2022 who had survived an IHCA or OHCA (n=129)	Survival to hospital discharge
Danciu et al. 2004 United States of America	Identify the most important prognostic factors for survival from IHCA Retrospective cohort study	Adults (>18 years) who underwent IHCA CPR (n=219)	Survival: 3-months Survival: 1-month Survival: hospital discharge

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Galatianou et al. 2017 Greece	Investigate association between BMI and outcome after OHCA in patients not treated with TTM Prospective observational study	Adults (>18 years) with OHCA transferred to ED (n=84)	Survival: ICU discharge Survival: ICU admission
Geri et al. 2016 France	Assess influence of BMI on day-30 and 1-year mortality of OHCA patients admitted to ICU Prospective cohort study	Adults admitted to ICU following OHCA and treated with TTM (n=818)	Survival: 1-year Survival: 30-days
Gil et al. 2017 Italy	Examine association between BMI and clinical outcome in patients with ECPR Retrospective cohort study	Adults with IHCA who had ECPR (n=200)	Neurological outcome: hospital discharge Survival: hospital discharge
Gupta et al. 2016 United States of America	Examine association of obesity with survival to hospital in IHCA Retrospective registry study	Adults (aged >18 years) undergoing CPR for IHCA (n= 836,289)	Survival: hospital discharge
Hjalmarsson et al. 2023 Sweden	Investigate if obesity, with or without diabetes, affects the survival of patients with OHCA Retrospective registry study	Adults (aged ≥18 years) with OHCA (n=55,483)	Survival: hospital discharge Survival: hospital admission ROSC
Jain et al 2010 United States of America	Examine association between BMI and survival for patients with IHCA Retrospective registry study	Adults (aged >18 years) with IHCA (n=21,237)	Survival: hospital discharge ROSC Acute resuscitation treatments CPR duration Time to defibrillation Number of shocks
Jung et al. 2016 Korea	Explore association between obesity and clinical outcomes Retrospective cohort study	Adult (aged >18 years) cardiac arrest survivors (OHCA and IHCA) treated with TTM (n=468: OHCA n=378, IHCA n=90)	Neurological outcome: hospital discharge Survival: 6-months
Kojima et al. 2023 Japan	Investigate association between BMI and clinical outcomes in patients receiving ECPR following OHCA Retrospective registry study	Adults (age not reported) with OHCA of presumed cardiac aetiology who received ECPR (n=1,044)	Neurological outcome: hospital discharge Survival: hospital discharge ROSC ECMO complications
Kosmopoulos et al. 2023 United States of America	Investigate effect of BMI on the survival to hospital discharge of refractory OHCA patients treated with ECPR Retrospective cohort study	Adults (aged 56.9 ± 12.0 years) with OHCA and BMI data (n=283)	Neurological outcome: hospital discharge Survival: 4-years Survival: hospital discharge
Lee H et al. 2021 Korea	Investigate association between BMI and favourable neurologic outcomes and survival to discharge of patients resuscitated from OHCA Prospective registry study	Adults (aged >18 years) with OHCA (n=605) transported to ED	Neurological outcome: hospital discharge Survival: hospital discharge
Lee S et al. 2021 Korea	Investigate prognostic impact of high lean body mass on postcardiac arrest patients Retrospective cohort study	Adults (not defined) treated with TTM and admitted to ICU following OHCA (n=155)	Neurological outcome: 1-month
Lewandowski et al 2024 Poland	Explored predictors of mortality among patients admitted to ICU following cardiac arrest Retrospective cohort study	Adults (aged >18 years) with non-traumatic cardiac arrest (OHCA and IHCA) (n=161: Asystole/PEA n=90; VF/pVT n=71)	Survival: hospital discharge

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Ogunnaike et al. 2016 United States of America	Examine association between BMI, defibrillation success, and survival outcomes of VT/VF arrest Retrospective registry study	Adults (not defined) with VF/VT IHCA (n= 7,110)	Survival: 24 hours Survival: hospital discharge ROSC ≥20 minutes First shock termination of VF/VT
Patlolla et al. 2021 United States of America	Understand differences in AMI complicated IHCA across BMI categories	Adults (>18 years) with primary diagnosis of AMI with IHCA (n= 314,609)	Survival: hospital discharge
Shurr et al. 2021 United States of America	Describe the survival, non-neurologic, and neurologic outcomes in patients with cardiac arrest (OHCA or IHCA) with CPR and VA-ECMO support Retrospective cohort study	Patients with cardiac arrest with CPR and VA-ECMO support (n=89) following OHCA or IHCA. Cannulated either after ROSC (n=39) or during ongoing cardiac arrest (n=50)	Neurological outcome: hospital discharge Survival: hospital discharge
Shahreyer et al. 2017 United States of America	Assess impact of morbid obesity on outcomes in patients with IHCA Retrospective national database study with matched samples	Adults (≥18 years) with IHCA (non-VF arrest, n= 26,412; VF arrest = 5,192)	Survival: hospital discharge
Swindell et al 2021 United States of America	Formulate an ABCD score based on four high-yield predictors to predict post-CPR survival probability Retrospective cohort study	IHCA in patients aged>50 years from 2012-2015 (n= 463,530)	Survival: hospital discharge ROSC
Testori et al. 2021 Austria	Examine effect of obesity on outcome after cardiac arrest Retrospective cohort study	Adults with non-traumatic cardiac arrest (OHCA or IHCA) and ROSC admitted to the ED between January 1992 and December 2007 (n=1,915)	Neurological outcome: 6 months Survival: 6 months
Wang et al 2020 Taiwan	Investigate association between central obesity and outcomes following IHCA Retrospective cohort study	Adults with IHCA during 2006–2015 (n=648)	Neurological outcome: hospital discharge Survival: hospital discharge
Wang et al 2018 Taiwan	Investigated whether body size correlates with outcomes of IHCA Retrospective cohort study	Adults with IHCA 2006 to 2015 and sustained ROSC >20 minutes (n= 766)	Neurological outcome: hospital discharge Survival: hospital discharge
Wang et al. 2023 China	Secondary analysis of National Emergency Cardiac Arrest Treatment (NECAT) database data Retrospective registry study	Adults (≥18 years) with non-traumatic IHCA CA (in ED), time from collapse to CPR >10 min, and no DNR order (n=535: cardiac origin n=179 and non-cardiac origin n=356)	ROSC
Wannasri et al. 2021 Thailand	Examine prevalence of internal organ injuries sustained from CPR Retrospective registry study	Adults (≥18 years) that died following cardiac arrest and received an autopsy, without trauma to chest and abdomen from 2012-2016 (n=154)	Injuries sustained during CPR
White et al. 2004 United Stated of America	Examine influence of body weight on defibrillation, resuscitation, and survival in patients with OHCA requiring defibrillation Retrospective cohort study	Patients (66±14 years) with OHCA, received defibrillation with non-escalating, impedance-compensating, 150-J biphasic waveform defibrillator (n=62)	Survival: hospital admission Survival: hospital discharge ROSC Shock success
Wolff et al. 2009 Sweden	Examined effect of rapid mild therapeutic hypothermia (time to target temperature and time to coldest temperature) on cardiac arrest outcome Prospective cohort study.	Adults with OHCA or IHCA with ROSC>5 minutes within 60 minutes of cardiac arrest, time to CPR <20 minutes and comatose post -arrest state (n=49)	Neurological outcome: hospital discharge

AHRQ = Agency for Healthcare Research and Quality; AMI = acute myocardial infarction; BMI = Body mass index kg/m2, CA = cardiac arrest; DNR = do not resuscitate; ECMO = extracorporeal membrane oxygenation; ECPR = extracorporeal cardiopulmonary resuscitation; ICU = intensive care unit, IHCA = in-hospital cardiac arrest; OHCA = out-of-hospital cardiac arrest; pVT = pulseless ventricular tachycardia; ROSC = return of spontaneous circulation; TTM = targeted temperature management; VF = ventricular fibrillation