

| Study | Design | No of cases | Diagnostic criteria | Average Follow-up | Risk factors identified (OR; 95%CI) [significance] |
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| Aibinder 2017 | Retrospective case series | 33 | No diagnostic criteria described in the study | 42 months | In patients previously treated for lower limb PJI risk of PJI following primary shoulder arthroplasty was 2.7% |
| Anakwenze 2017 | Retrospective cohort study | 4630 | Not explained in the study | 2.6 years | BMI not associated with increased risk of deep infection |
| Bala 2016 | Retrospective case series | 2528 HIV positive patients | Not defined in the study | 4.13 years | HIV positive patients. 90 days (2.69; 1.51-4.80) [p<0.01]. 2 years (1.64;1.17-2.32) [p=0.04]. |

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| | | and 145,761 control | | | |
| Cheung 2008 | Retrospe ctive case series | 4147 with 12 having surgery for drainage of haemato ma | No diagnostic criteria defined in the study | 68 months | Haematoma associated with infection – of 9 patients who had cultures taken 6 were positive. No statistical analysis |
| Florschutz 2015 | Retrospe ctive | 814 | Positive results on a joint fluid culture, a synovial/bone tissue culture, or both | Length of follow up not reported but | Previous shoulder surgery (no odds ratio given) [p=0.016] |

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| | cohort study | | | minimum 2 years required for inclusion | |
| Hatta 2017 | Retrospective cohort study | 1834 | presence of positive joint fluid culture, positive synovial or bone tissue culture, intraoperative findings, or positive blood culture associated with a clinical presentation consistent with periprosthetic infection | 3.5 years | Smoking (5.22;1.92-18.23) [p<0.001]. Younger age (0.58; 0.44-0.80) [p=0.002] |
| Morris 2015 | Retrospective cohort study | 301 | No diagnostic criteria used. Diagnosis based on combination of clinical findings, raised inflammatory markers and aspiration | 38.1 months | RSA for previous failed arthroplasty (5.75; 2.01-16.43) [p=0.001]. Age under 65 (4.0; 1.21-15.35) [p=0.021] |
| Padegimas 2015 | Epidemiological | 82,498 | Infections identified from clinical coding. No diagnostic criteria explained in the | Not given in study | Younger age (1.020; 1.017-1.025) [p<0.0001]. Male (1.961; 1.816- |

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| | study | | study | | 2.117) [p<0.0001]. Nutritional deficiency (2.62;1.53-4.51) [p=0.0005]. Drug abuse (p2.38; 1.41-4.02)[p=0.01]. Anaemia (2.05;1.69-2.49) [p<0.0001] |
| Richards 2014 | Retrospe ctive case series | 3906 | Revision surgery for infection supported clinically by more than one of the following criteria: purulent drainage from the deep incision, fever, localized pain or tenderness, a positive deep culture, and/or a diagnosis of deep infection by the operating surgeon based on intraoperative findings | 2.7 years | For every one year increase in age, a 5% lower risk of infection (0.95;0.92-0.98) [p<0.001]. Males (2.59;1.27-5.31) [p=0.009]. Reverse TSA versus TSA (6.11;2.65-14.07). Trauma (2.98; 1.15-7.74) |

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| Singh 2012 | Retrospe ctive case series | 2588 | <p>Presence of one or both of (1) positive joint fluid culture from needle aspiration, arthroscopic procedure, fluid obtained at surgery or fluid from sinus; or (2) positive synovial or bone tissue culture. In absence of positive culture, presence of clinical infection was defined when the treating surgeon believed an infection was present and one of (1) purulent fluid or necrotic synovial fluid at operation; or (2) positive blood culture</p> | 7 years | <p>Male patient (reference 1.0) (female HR 0.29;0.12-0.71) [p=0.006].</p> <p>Younger patient (0.78;0.61-0.98 for every 10-year age increase) [p=0.04]</p> |
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| Singh 2012 | Retrospe ctive case series | 1431 | Presence of one or both of (1) positive joint fluid culture from needle aspiration, arthroscopic procedure, fluid obtained at surgery or fluid from sinus; or (2) positive synovial or bone tissue culture. In absence of positive culture, presence of clinical infection was defined when the treating surgeon believed an infection was present and one of (1) purulent fluid or necrotic synovial fluid at operation; or (2) positive blood culture | 8 years | Trauma (3.18; 1.06-9.56) [p=0.04] |
| Smucny 2015 | Epidemi ological study | 241193 TSA and 159795 | No diagnostic criteria explained in the study. Data based on clinical coding | Infections during inpatient stay | Total shoulder arthroplasty versus hemiarthroplasty (1.83; 1.39-2.41) [p<0.001]. |

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| | | HAS | | | <p>Medicaid insurance (3.93;2.54-6.07) [p<0.001].</p> <p>Previous non-union of humerus (5.76;3.76-8.83) [p<0.001].</p> <p>Avascular necrosis (2.71;1.63-4.52) [p<0.001].</p> <p>Proximal humerus fracture (2.62; 1.88-3.66) [p<0.001].</p> <p>Coagulopathy (2.69; 1.75-4.14) [p<0.001].</p> <p>Renal failure (2.34; 1.65-3.33) [p<0.001]</p> |
| Werner 2016 | Retrospective | 8420 | <p>Infections identified from clinical coding.</p> <p>No diagnostic criteria explained in the</p> | 6 months | Shoulder arthroplasty within 3 months of infection (2.0;1.2-3.4) |

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| | cohort study | | study | | [p=0.007] |
| Werthel 2017 | Retrospective cohort study | 4577 | presence of 1 or both of the following: (1) positive joint fluid culture from needle aspiration, arthroscopic procedure, fluid obtained at surgery, or fluid draining from a wound communicating with the humerus or (2) positive synovial or bone tissue culture. In those patients without a positive joint fluid culture, the presence of a clinical infection was determined when the treating orthopaedic surgeon believed an infection was present on the basis of clinical presentation (history and physical | 63 months | <p>Previous surgery on the shoulder (1.62; 1.27-1.97) [p=0.0003].</p> <p>Male (0.52;0.32-0.84 hazards ratio for females compared to males) [p=0.0074].</p> <p>Younger age (0.8;0.68-0.96) [p=0.015].</p> <p>Acute trauma (4.49; 1.33-10.61) [p=0.0117]</p> |

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| | | | examination), documentation in the surgeon's note, and one or both of the following: (1) operative findings including purulent joint fluid, thick serosanguinous joint fluid, or the presence of necrotic synovial tissue or (2) a positive blood culture. | | |
| Yian 2017 | Retrospective case series | 8056 | Not explained in the study | 38.8 months | Operative time over 150 minutes (1.68; 1.01-2.80). patient age less than 60 years (2.34; 1.42-3.86). RSA (versus conventional TSA) (3.19; 1.84-5.53) |
| Walch et | Retrospe | 420 | No explanation of criteria used for | Average 39.9 months | Overall infection rate 2.3%. First |

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| al (2012) | ctive cohort study | | definitive diagnosis | for first cohort and 36.3 for second cohort | cohort of patients operated on between 1995-2003 had infection rate 4.9%. The second cohort operated on between 2003-2007 had infection rate of 0.9%. |
| Zumstein 2011 | Systemat ic review | 30 cases of infection from 14 studies | Not defined in the review | Studies excluded with less than 24 month follow up. Average follow up among studies 42 months | Revision reverse shoulder arthroplasty (5.8%) vs primary reverse revision (2.9%) |