**Appendix 8** Costs of events, uncertainty range and the outcomes of the multivariate sensitivity analysis

**TABLE 1.** Variation range for cost of adverse events (AEs) used in multivariate sensitivity analysis, and subsequent changes in outcomes of interests. (Ibuprofen versus indomethacin model)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Input variable | Value, QAR (uncertainty range, ±10%) (USD [range]) | Average cost of oral ibuprofen, QAR (95% CI) (USD [95% CI]) | Average cost of IV indomethacin, QAR (95% CI) (USD [95% CI])] | Average cost of IV ibuprofen, QAR (95% CI) (USD [95% CI]) | ICER of oral ibuprofen and IV indomethacin | ICER of IV ibuprofen and IV indomethacin, QAR (95% CI) (USD [95% CI]) per success |
| Base-case |  | 414,761  (413,528- 415,994)  (113,945 [113,607-114,284]) | 436,158  (434,762- 437,554)  (119,824 [119,440-120,207]) | 435,794  (434,427- 437,163)  (119,724 [119,348-120,100]) | Dominance for oral ibuprofen | QAR 12,546  (-54,693- 79,785)  (3,447 [-15,026-21,919]) |
| Cost of events |  |  |  |  |  |  |
| ROP | 91,700 (82,530-100,870)  (25,192 [22,673-27,712]) | 500,371  (499,102-501,640)  (137,465 [137,116-137,813]) | 515,407  (514,019- 516,795)  (141,595 [141,214-141,977]) | 517,823  (516,433-519,213)  (142,259 [141,877-142,641]) | Dominance for oral ibuprofen | Dominance for IV indomethacin |
| PVL | 108,980 (98,082-119,878)  (29,940 [26,946-32,934]) |  |  |  |  |  |
| BPD | 170,754 (153,679-187,829)  (46,910) [42,220-51,601] |  |  |  |  |  |
| Pulmonary hemorrhage | 90,122 (81,110-99,134)  (24,759 [22,283-27,235]) |  |  |  |  |  |
| IVH | 93,894 (84,505-103,283)  (25,795 [23,216-28,374]) |  |  |  |  |  |
| NEC | 119,274 (107,347-131,201)  (32,768 [29,491-36,044]) |  |  |  |  |  |
| GIB | 61,437 (55,293-67,581)  (16,878 [15,190-18,566]) |  |  |  |  |  |
| Intestinal perforation | 120,384 (108,346-132,422)  (33,073 [29,765-36,380]) |  |  |  |  |  |
| Oliguria | 4,532 (4079-4985)  (1,245 [1,121-1,370]) |  |  |  |  |  |
| PVL: periventricular leukomalacia, ROP: retinopathy of prematurity, BPD: bronchopulmonary dysplasia, IVH: intraventricular hemorrhage, NEC: necrotizing enterocolitis, GIB: gastrointestinal bleeding, ICER: Incremental cost-effectiveness ratio, QAR: Qatari riyal, USD: United States Dollars, CI: confidence interval | | | | | | |

**TABLE 2.** Variation range for cost of adverse events (AEs) used in multivariate sensitivity analysis, and subsequent changes in outcomes of interest (Ibuprofen versus paracetamol model)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Input variable | Value, QAR (uncertainty range, ±10%) (USD [range]) | Average cost of oral ibuprofen, QAR (95% CI) (USD [95% CI]) | Average cost of oral paracetamol, QAR (95% CI) (USD [95% CI])] | Average cost of IV ibuprofen, QAR (95% CI) (USD [95% CI]) | ICER of oral ibuprofen and oral paracetamol | ICER of IV ibuprofen and oral paracetamol, QAR (95% CI) (USD [95% CI]) per success |
|  |  | 404,970  (393,834- 416,106)  (111,255)  [108,196-114,315] | 397,798  (386,363- 409,233)  (109,285)  [106,144-112,427] | 415,588  (403,174- 428,002)  (114,173)  [110,762-117,583] | Dominance for oral paracetamol | Dominance for oral paracetamol |
| Cost of events |  |  |  |  |  |  |
| ROP | 91,700 (82,530-100,870)  (25,192) [22,673-27,712] | 507,673  (506,479-508,867)  (139,471)  [139,143-139,799] | 490,079  (488,846-491,311)  (134,637)  [134,298-134,976] | 490,919  (489,592-492,246)  (134,868)  [134,503-135,232] | Dominance for oral paracetamol | Dominance for oral paracetamol |
| PVL | 108,980 (98,082-119,878)  (29,940) [26,946-32,934] |  |  |  |  |  |
| BPD | 170,754 (153,679-187,829  (46,910) [42,220-51,601] |  |  |  |  |  |
| Pulmonary hemorrhage | 90,122 (81,110-99,134)  (24,759) [22,283-27,235] |  |  |  |  |  |
| IVH | 93,894, (84,505-103,283)  (25,795) [23,216-28,374] |  |  |  |  |  |
| NEC | 119,274 (107,347-131,201)  (32,768) [29,491-36,044] |  |  |  |  |  |
| GIB | 61,437 (55,293-67,581)  (16,878) [15,190-18,566] |  |  |  |  |  |
| Intestinal perforation | 120,384 (108,346-132,422)  (33,073) [29,765-36,380] |  |  |  |  |  |
| Oliguria | 4,532 (4079-4985)  (1,245) [1,121-1,370] |  |  |  |  |  |
| PVL: periventricular leukomalacia, ROP: retinopathy of prematurity, BPD: bronchopulmonary dysplasia, IVH: intraventricular hemorrhage, NEC: necrotizing enterocolitis, GIB: gastrointestinal bleeding, ICER: Incremental cost-effectiveness ratio, QAR: Qatari riyal, USD: United States Dollars, CI: confidence interval | | | | | | |

**TABLE 3.** Multivariate sensitivity analysis of ibuprofen versus indomethacin

|  |  |  |  |
| --- | --- | --- | --- |
|  | Dominance | Cost-effective | Not Cost-effective |
| Oral ibuprofen versus IV indomethacin |  |  |  |
| Base-case | 63.24% | 34.66% | 2.10% |
| Multi-variate analysis | 63.44% | 34.22% | 2.34% |
| IV ibuprofen versus IV indomethacin |  |  |  |
| Base-case | 53.90% | 1.40% | 44.70% |
| Multi-variate analysis | 54.00% | 11.34% | 34.66% |

**TABLE 4.** Multivariate sensitivity analysis of ibuprofen versus paracetamol

|  |  |  |  |
| --- | --- | --- | --- |
|  | Dominance | Cost-effective | Not Cost-effective |
| Oral ibuprofen versus oral paracetamol |  |  |  |
| Base-case | 72.60% | 2.60% | 24.80% |
| Multi-variate analysis | 72.16% | 20.80 % | 7.04% |
| IV ibuprofen versus oral paracetamol |  |  |  |
| Base-case | 52.00% | 39.00% | 9.00% |
| Multi-variate analysis | 60.70% | 37.96% | 1.34% |