

Adam's perioperative fluid balance. (Assumes weight of 20 kg; surface area =0.8 m2)

Adam's usual daily intake (known)	Enteral intake = [2100] ml
Adam's usual daily output (estimated)	Urine output = [1380ml] ; insensible loss = [400ml/m2 x 0.8 =320ml] ; dialysis loss = [400] ml; Total = [2100] ml

	Time between ward admission & start of preoperative fasting 2200-0500 = 7 h	Time between start of preoperative fasting period & anaesthesia 0500-0700 = 2 h	Time between induction of anaesthesia & start of surgery 0700-0800 = 1 h
a) Insensible losses (400ml/m2/day)	$(400 \times 0.8) \times 7 / 24 = 93 \text{ ml}$	27 ml	14 ml
b) Urine output (assumption that= 2100ml-insensible loss-dialysis losses) = 57.5 ml/h	$57.5 \times 7 = 403 \text{ ml}$	115 ml	58ml
c) Blood loss	0	0	0
d) Dialysis loss (received 8 of usual 15 cycles)	$8 / 15 \times 400 = 213 \text{ ml}$	0	0
Total (cumulative) fluid losses	709(709) ml	142(851) ml	72(923) ml
Actual(cumulative) fluid input	952 (952) ml (as far as I can ascertain)	0(952)ml	750(1702) ml
Estimated (cumulative) fluid excess	243(243)+ve ml	-ve142(+ve 101) ml	+ve 678 (+ve779) ml
Comments + relevant information regarding Na⁺ content of : a) input fluids b) losses	Comments: Fluid given as Dioralyte (60 mmol Na ⁺ /l Urine Na ⁺ assumed 40 mmol/l Na ⁺ given= 57 mmol Na ⁺ content of losses: urine=16 mmol Dialysis=30 mmol	Comments: Na ⁺ content of fluids given: nil Na ⁺ content of losses: urine 4.6 mmol	Comments: received 750 mls 0.18% saline/4% glucose Na ⁺ content of fluids given = 23 mmol Na ⁺ content of losses: urine:2.3 mmol
Reasons why planned fluid infusion (content or infusion rate) should change due to change in estimated loss			Since 2200h previous evening has gained 779 mls fluid. There was no fluid deficit at the start of anaesthesia, the 0.18% saline/glucose given to Adam will have diluted the sodium present in his serum. His kidneys cannot respond to lose the excess water he has been given

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	Time from start of surgery until vascular clamps on (0800-1000)	Time while vascular clamps applied (1000-1030)	Time from when clamps released until end of surgery (1030-1100)	Time from end of surgery until arrival in ICU (1100-1215)
a) Insensible losses	Basal insensible losses = 27 ml Evaporative losses from wound = 4mg/kg/h = 160 ml	Basal and evaporative losses = 47 mls	Basal and evaporative losses = 47 mls	Basal losses = 17 mls
b) Urine output	115 ml	29 mls	29 mls	72 mls
c) Blood loss	600 ml	200 mls	328 mls	Nil
Total(cumulative) fluid losses	902 (1825) ml	276 (2101) mls	404 (2505) mls	89 (2594) mls
Actual (cumulative) fluid input	750 mls 0.18% saline/4% glucose, 800 mls albumin soln (Na approx 130 mmol/l), 500 mls Hartmann's (Na 131 mmol/l) 250 mls red cell conc (Na approx 130 mmol/l) 2300 (4002) mls	200 mls albumin soln 200 (4202) mls	250 mls red cell conc 250 (4452) mls	Nil 0(4452) mls
Estimated (cumulative) fluid excess	1398 (2177)	-176 (2001) mls	-154 (1847) mls	-99 (1748) mls
Comments + relevant information regarding Na⁺ content of : a) input fluids b) losses	Comments: Na ⁺ content of fluids given: 202 mmol Na ⁺ content of losses: 83 mmol	Comments: Na ⁺ content of fluids given: 26 mmols Na ⁺ content of losses: 27.2 mmol	Comments: Na ⁺ content of fluids given: 35 mmols Na ⁺ content of losses: 47 mmols	Comments: Na ⁺ content of fluids given: nil Na ⁺ content of losses: 2.9 mmol
Reasons why planned fluid infusion (content or infusion rate) should change due to change in estimated loss	Note cumulative fluid excess of 2177 mls at end of this period. This may be more since the blood volume lost may well be overestimated, and the allowance for evaporative loss is generous. Adam's kidneys cannot respond to make extra urine. <u>Too much fluid has been given, and although a lot of Na⁺ given, it is too dilute, resulting in a lowering of the serum sodium as measured at 0932h.</u>			Note cumulative fluid balance of +ve 1748 mls. May be more if blood loss and evaporative losses over-estimated