Breast pump trial – term infants

TITLE:
Randomized Trial Comparing the Efficacy of a Novel Manual Breast Pump with a Mini-Electric Breast Pump in mothers with Term Infants

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Study objective:

To compare the efficacy of a mini-electric pump (MEP; Medela mini-electric) versus a novel manual pump (MP; AVENT Isis manual pump) when used in mothers of term babies.

Method:

60 term breastfeeding mothers used both the MP (n=32) and the MEP (n=28) in randomised order at 8 weeks postpartum.
Mothers were asked to pump from each breast for 10 minutes in the presence of two research staff and the following measurements were made:

- the total volume of milk produced per breast
- weight of milk produced at each 1 minute period (examination of milk flow)
- creamatocrit (fat content) at 1 minute intervals

Mothers were also asked to complete a questionnaire about each pump and maternal ratings on the pump characteristics such as ease of use, amount of suction, comfort, pleasant to use and overall opinion of pump were noted.

Results:

- The total weight of milk produced over the 20 minute period was not significantly different in the MP (144 ± 64g) as compared to the MEP (146 ± 65g)
- There was no significant difference in the mean weight and fat content of milk produced throughout the study
- When analysing the pattern of milk production over each 10 minute period for the first pump and first breast the milk flow was significantly greater in mothers using the MP rather than the MEP (P = 0.008), however there was no significant difference in the second breast, or for either breast using the second pump. (Please refer to Figure1)
- Mothers awarded significantly higher scores for the MP than the MEP in 3 out of 5 categories; 'comfort', 'pleasant to use' and 'overall opinion of the pump'. (Please refer to Table 1)
- Significantly more mothers choose to keep the MP (64%; n =37) as compared to the MEP (36%; n=21) [P= 0.049]. Two mothers did not keep either pump.

Conclusion:

The authors concluded that despite the greater complexity and expense of the MEP, both pumps showed similar overall efficacy. However the MP was clearly preferred by mothers.

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Figure 1: Weight of milk expressed over a 10-minute period according to pump used

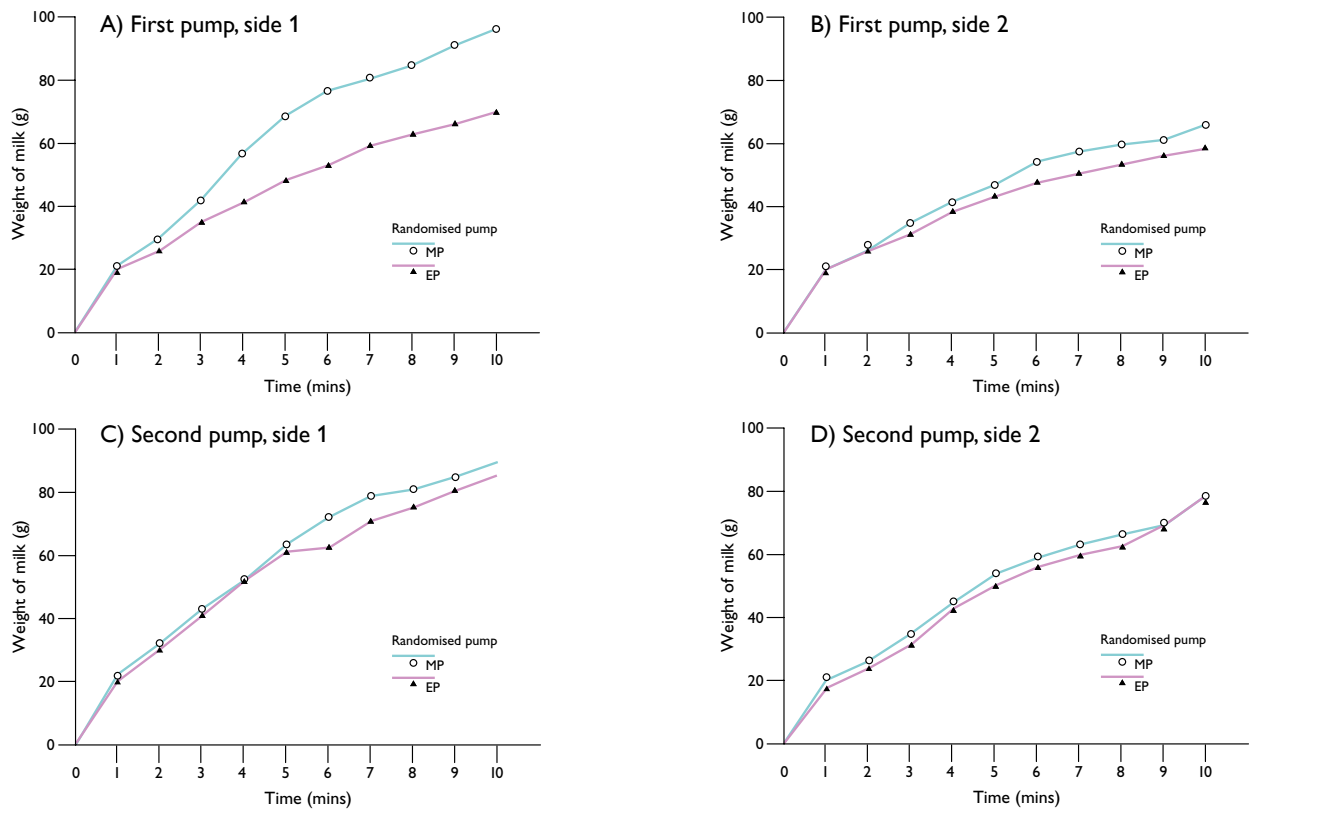

Table 1: Questionnaire results. 1 = best score, 7 = worst score; *P=0.001, **P<0.001, Wilcoxon signed rank test for manual pump versus mini-electric pump

Parameter		1	2	3	4	5	6	7
		n (%)						
Ease of use	Manual	18 (30)	20 (33)	9 (15)	9 (15)	2 (5)		
	Mini-electric	23 (38)	16 (27)	9 (15)	11 (18)		1 (2)	
Amount of suction	Manual	19 (32)	21 (35)	11 (18)	6 (10)	1 (2)	1 (2)	
	Mini-electric	29 (48)	14 (23)	6 (10)	6 (10)	2 (3)	3 (5)	
Comfortable to use	Manual**	27 (45)	17 (28)	8 (13)	5 (8)	2 (3)		
	Mini-electric	3 (5)	9 (15)	9 (15)	27 (45)	7 (12)	4 (7)	1 (2)
Pleasant to use	Manual**	23 (38)	12 (20)	9 (15)	10 (17)	4 (7)	1 (2)	
	Mini-electric	2 (3)	10 (17)	9 (15)	20 (33)	14 (23)	2 (3)	3 (5)
Overall opinion	Manual*	19 (32)	22 (37)	12 (20)	5 (8)	1 (2)		
	Mini-electric	4 (7)	21 (35)	18 (30)	10 (17)	6 (10)	1 (2)	