Although treatments with progesterone (P4) releasing devices and estradiol benzoate (EB) have resulted in synchronous ovulation and acceptable pregnancy rates at a fixed-time AI (FTAII) in cows and heifers, results in post-partum beef cows have often been lower than expected. Two experiments were designed to evaluate if treatment with eCG at the time of P4 device removal, would increase pregnancy rates in a FTAI program in postpartum beef cows. Experiment 1 was performed in 4 replicates and 481 lactating beef cows (Angus and Polled Hereford, 60 to 80 d postpartum) with a body condition score of 2.5 to 3.5 (1 to 5 scale) were used (Replicate 1 n=150; Replicate 2 n=69, Replicate 3 n=143 and Replicate 4 n=119). At the beginning of each replicate (Day 0) all cows received a P4 device (1 g of P4, Triu-b, Elastecnica, Argentina) and 2 mg EB (Syntex, Argentina). On Day 8, Triu-b devices were removed and all cows received 150 $\mu$g D(+) cloprostenol (Preloban, Intervet, Argentina) cows were randomly divided to receive 400 iu eCG (Novormon 5000, Syntex, Argentina) on Day 8 (eCG group), 1 mg EB im on Day 9 (EB group) or eCG on Day 8 and EB on Day 9 (eCG+EB group). Cows were not observed for signs of estrus and were FTAI 52 to 56 h after Triu-b removal. Ovarian ultrasonography (Concept MCV, 7.5 MHz transducer) was performed on Day 0, to determine ovarian status and 30 d after FTAI to determine pregnancy status. Based on the ultrasound examination on Day 0, 336/481 (69.9%) cows had a CL and 145/481 (30.1%) cows had follicles $\geq$8 mm in diameter. Data was analyzed by logistic regression (Infostat®). There was no significant effect of ovarian status at the time of treatment (P=0.3) and there was a significant (P<0.05) replicate effect, due to a lower pregnancy rate across treatments in replicate 3 than in the other 3 replicates. Nevertheless, there was a significant treatment effect, attributed to a lower pregnancy rate (P<0.05) in the eCG Group (76/158; 48.1%) than in the EB (101/163; 62.0%) and eCG+EB groups (89/160; 55.6%), respectively. Experiment 2 was designed to evaluate the same treatments of Experiment 1, except that it was performed using 181 lactating postpartum Braford (1/3 Brahman, 5/8 Hereford) cows (60 to 90 d postpartum) with a condition score of 1.5 to 2.5 and using PRID (1.55 g of P4; Sanofi, France) devices. Ovarian activity was estimated by rectal palpation on Day 0 and 66/181 (36.5%) cows had a CL, 67/181 (37.0%) had with medium size follicles and 48/181 (26.5%) had ovaries without significant structures. There was no significant effect of ovarian status at the time of treatment (P=0.7), but there was a significant treatment effect, attributed to a lower pregnancy rate (P<0.05) in the eCG group (11/63; 17.4%) than in the eCG+EB group (22/62; 35.5%). The pregnancy rate in the EB group (15/56; 26.7%) was intermediate between the eCG+EB and eCG groups, but differences were not significant. Results were interpreted to suggest that the use of eCG at the time of removal of a P4 releasing device is less adequate than EB 24 h after P4 device removal in a FTAI program in postpartum beef cattle. This is probably a reflection of a more variable interval from treatment to ovulation in cows treated with eCG than in those treated with EB. Furthermore, the combination of eCG+EB did not significantly improve pregnancy rates but the numerical increase in Braford cows with low body condition score in Experiment 2 warrants further investigation.