

Effects of Cinacalcet on 1-84 PTH and 7-84 PTH

Richard Amerling, Marcella Modugno, Susan Goretsky. Beth Israel Medical Center, New York, NY and Irving Place Dialysis Center, New York, NY.

Cinacalcet binds to and activates the calcium sensing receptor and lowers both calcium and PTH. Bone histology assessment of bone turnover in 48 patients failed to show consistent changes in the Cinacalcet treated group. 1-84 PTH (CAP) increases bone turnover, while 7-84 PTH (CIP) hormone (also secreted by the parathyroid gland) lowers bone turnover. The 1-84 PTH/7-84 PTH ratio has been demonstrated with bone histology to predict bone turnover. We measured 1-84 and 7-84 PTH in patients before and after 4 weeks of Cinacalcet, 30 mg. daily.

Patient	Date started	Dose cinacalcet	Dose hectorol	Pre-Total PTH	Post-Total	Pre-CAP	Post-CAP	Pre-CIP	Post-CIP	Pre-ratio
1	4/17/04	30mg	0.5	1512	1673	790	868	722	805	1.1
2	4/30/04	30mg	1	681	560	435	389	245	171	1.8
3	4/28/04	30mg	4 (Zemp)	1445	1268	811	637	634	631	1.3
4	4/30/04	30mg	0.5	979	865	581	441	398	424	1.5
5	4/30/04	30mg	0.5	1379	1096	638	498	741	599	0.8
6	4/30/04	30mg	2	673	604	495	399	177	205	2.8
7	4/30/04	30mg	1	710	314	488	188	223	126	2.2
8	5/5/04	30mg	0.5	779	774	439	488	340	285	1.3
9	4/30/04	30mg	0	427	519	275	352	152	168	1.8
10	4/30/04	30mg	4	406	712	285	470	122	242	2.3
11	5/10/04	30mg	2	411	351	306	267	105	84	1.6
Mean values			1.0	864.0	800.4	508.8	458.3	355.3	342.2	1.7

Patient	Date started	Post ratio	Pre Ca	Post Ca	Pre Phos	Post Phos	Pre Ca x P	Post Ca x P	Pre alk phos	Post alk phos
1	4/17/04	1.1	10.3	9	6.3	7.3	65	66	241	397
2	4/30/04	2.3	8.8	8.7	6.5	4.9	57	43	288	242
3	4/28/04	1	9	9.1	6.1	5.5	55	50	211	242
4	4/30/04	1	10	8.2	7.4	5.4	74	4	453	454
5	4/30/04	0.8	9.4	9.2	6.3	5.7	59	52	344	378
6	4/30/04	1.9	8.5	7.9	4.4	4.5	37	36	78	88
7	4/30/04	1.5	8.7	8.5	5.4	5.4	47	46	72	72
8	5/5/04	1.7	9.4	8.3	4.8	4.3	45	36	369	424
9	4/30/04	2.1	9.2	8	7.3	6.5	67	52	86	95
10	4/30/04	1.9	10.4	8.4	5.2	5.1	54	43	95	110
11	5/10/04	3.2	9.9	9	4.3	6.2	43	56	277	245
Mean values		1.7	9.5	8.7	5.9	5.6	55.7	49.2	220.2	240.5

Cinacalcet had a modest effect on total PTH (sum of 1-84 and 7-84), no effect on the 1-84 PTH/7-84 PTH ratio, but marked lowering of Ca x Phos. Our findings are consistent with the bone biopsy results of the Amgen clinical trial. Cinacalcet may lower Ca and Phos through channels unrelated to bone turnover.