Indication for Oral 1,25-Dihydroxy vitamin D₃ Pulse Therapy in Patients with Renal Osteodystrophy at Hemodialysis Induction

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Dear Sir,

Most cases in which 1,25-dihydroxyvitamin D₃ [1,25(OH)₂D₃] pulse therapy was performed seem to have severe secondary hyperparathyroidism [1, 2]. The set-point between Ca and parathyroid hormone (PTH) is thought to be already abnormal at the end stage of renal failure and the number of receptors of parathyroid glands to 1,25(OH)₂D₃ is also already decreased [3-6]. It is not thought to be effective to administer conventional doses of 1,25(OH)₂D₃ to patients in this condition. Therefore, many patients develop secondary hyperparathyroidism instead of receiving the effect of 1,25(OH)₂D₃ therapy.

Figure 1 shows a case that had a good serum PTH level after receiving 1,25(OH)₂D₃ by conventional therapy following hypercalcemia due to its pulse therapy. We consider hypercalcemia as a sign of normalization of the set-point and a reduction of hungry-bone status. At this point, alkaline phosphatase (ALP) isoenzyme is also normalized. We noted several cases which had moderately elevated serum PTH levels (C-PTH: 7-12 ng/ml, normal range: less than 0.5 ng/ml).

We would like to propose a protocol for administering 1,25(OH)₂D₃. At first the set-point should be normalized by oral 1,25(OH)₂D₃ pulse therapy from induction of hemodialysis while testing for hypercalcemia. When hypercalcemia appears and ALP isoenzyme is normalized (%ALP₂ > %ALP₃), the set-point is considered to change for the better, and conventional therapy should

A = 1,25(OH)₂D₃ 3.0 µg x 2/week

1,25(OH)₂D₃ 2.5 µg x 2/week C = 1,25(OH)₂D₃ 2.0 µg x 2/week

10	11	12	1992/1	2	3	months
1991/1	2	3	4	5	6	7

Fig. 1. A case (male, 39 years old, hemodialysis duration 76 months) that had a good serum PTH level after receiving 1,25(OH)₂D₃ by conventional therapy following hypercalcemia after oral pulse therapy.

be begun. By this method, the conventional doses [e.g. CaCH₃COO)₂] can be expected to dose of 1,25(OH)₂D₃ will be effective for the increase.

parathyroid glands, and, moreover, there is a We would like to propose administering possibility that the dose of 1,25(OH)₂D₃ can oral 1,25(OH)₂D₃ pulse therapy at the induction be decreased. As the result, phosphate binding of hemodialysis.

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