Can Oral 1,25(OH)₂D₃ Pulse Therapy Reduce Parathyroid Hyperplasia?

T.	Toru	Hyodo ^a
K.	Koji	Ono ^a
T.	Tsutomu	Koumi ^a
M.	Masanobu	Ueda ^a
I.	Ikuo	Miyagawa ^a
K.	Kazuhiko	Kodani ^b
S.	Soichiro	Doi ^c
M.	Masami	Ishibashi ^c
T.	Takatomo	Morita ^c

Department of ^aUrology and ^bRadiology, Tottori University School of Medicine, ^cMorita Clinic, Yonago, Japan

Toru Hyodo, MD, PhD, Department of Urology, Tottori University School of Medicine, 36-1 Nishi-machi, Yonago-shi 683 (Japan)

Dear Sir,

It has been reported that 1,25(OH)₂D₃ pulse therapy regulates the increased serum PTH and ALP in chronic hemodialysis patients with secondary hyperparathyroidism [1]. However, it has remained unexplained whether the size of the parathyroid glands changes with the variation of the serum PTH during the pulse therapy. In this study, we followed the changes of the maximal diameter of the parathyroid glands with the course of the serum PTH-C, ALP, osteocalcin and total hydroxyproline during the pulse therapy.

Table 1. Changes of the serum PTH-C, ALP, osteocalcin and total hydroxyproline

Table 2. Changes of the maximal diameter (cm) of the parathyroid glands

Before therapy compared with 1 month after administration: 6 glands reduced; 1 gland unchanged; 1 gland swelled. 1 month after administration compared with 3 months after administration: 3 glands reduced; 5 glands unchanged. 3 months after administration compared with 7 months after administration: 1 gland swelled; 7 glands unchanged. Before therapy compared with 7 months after administration: 6 glands reduced; 1 gland swelled; 1 gland unchanged.

172

Hyodo/Ono/Koumi/Ueda/Miyagawa/Kodani/Doi/Ishibashi/Morita

1000-1000

3. MHZ

L 5. MHZ At

scale: 1.000

D⁵TE 5%? II-ii ISITc-TOE%₈H

L S.βHHZ SCİ

C 3.51HI

3

FOCUS: 2SİEPS S«IK i 42DB t > J : 63DB

SfiHMi 8 SCALE: 1.iβBCIt

çBl Si: li,fi

isl ♦: î!i:k

CPL ;■:: ifSJcf!

UA*

DATE fş-i's !? TİFE 17:13:2" I&itOH

.1 L 5.0KH2 ACT

2 L 3.5HHZ

• ^^-.5%₈cjr

FOCUSİ 4STEP5 fiAIH : 4?DB D.R : 63DB

col « w,m

Fig. 1. Echographic course of case 1 under oral 1,25(OH)2D3 pulse therapy before (a), 39 (b), 102 (c) and 249 days (d) after administration.

Six chronic hemodialysis patients with secondary hy-perparathyroidism were administered 1,25(OH)2D3 at a dose of 2.5–4.0 µg on 2–3 days a week for about 7 months (6.87 ± 0.47 months), and the maximal diameter of the parathyroid glands was periodically observed ultrasonographically by a special radiologist concomitant with measurement of serum PTH-C, ALP, osteocalcin and total hydroxyproline. On the measurement of the parathyroid glands by ultrasonography, to get the reliable data to compare, a change of 20% was considered to be significant. During the pulse therapy, the serum PTH-C was inhibited, but the serum ALP, osteocalcin and total hy-droxyproline did not change (table 1). Sizes of each parathyroid gland are presented in table 2. Among 8 glands with hyperplasia in 5 patients, 6 glands were reduced, 1 swelled and 1 remained unchanged after about 7 months. Echographic course of case 1 is illustrated in figure 1.

It is considered that parathyroid hyperplasia can be reduced by oral 1,25(OH)2D3 pulse therapy.

Reference

1 Tsukamoto Y, Nomura M, Marumo F: Pharmacological para-thyroidectomy by oral 1,25(OH)2D3 pulse therapy. Nephron 1989;51:130–131.