

CLINICAL IMPACTS OF ACETATE FREE DIALYSATE



Minoru Ito, Satoko Ito, Miho Suzuki, Ikuto Masakane

Yabuki Hospital, Division of Nephrology, Dialysis Center, Yamagata, JAPAN



OBJECTIVES

Recently, acetate-free citrate containing dialysate (A(-)D) started to be distributed in Japan. The aim of this study is to assess clinical effects of the dialysate switch from acetate containing dialysate (A(+D) to A(-)D in hemodialysis patients.

METHODS

This is a non controlled before-after trial. 84 maintenance hemodialysis patients were enrolled in this study (table 1). All patients were treated with A(+D) from June 2009 to December 2010, and then followed by the switch to A(-)D until June 2012 in our clinic (Clinic 0). We compared the pre-change follow-up data with post-change data about frequency of intra-dialysis hypotension, degree of subjective symptoms assessed by a self scored scale, nutritional status evaluated by MIS (1), calcification of aortic arch estimated by AoACS, described in Figure 1 (2). For comparison, we used the data of other 2 clinics (Clinic1 : continued to use A(-)D in this study periods, Clinic 2 : continued to use A(+D) in this study periods).

Table 1. Basic characteristics of the patients in each clinic

	n	Age(y.o.)	Duration(year)	DM(%)	Male/Femal
Clinic 0	84	59	7.8	24	59 / 25
Clinic 1	45	65	6.1	31	28 / 17
Clinic 2	35	69	5	43	16 / 19

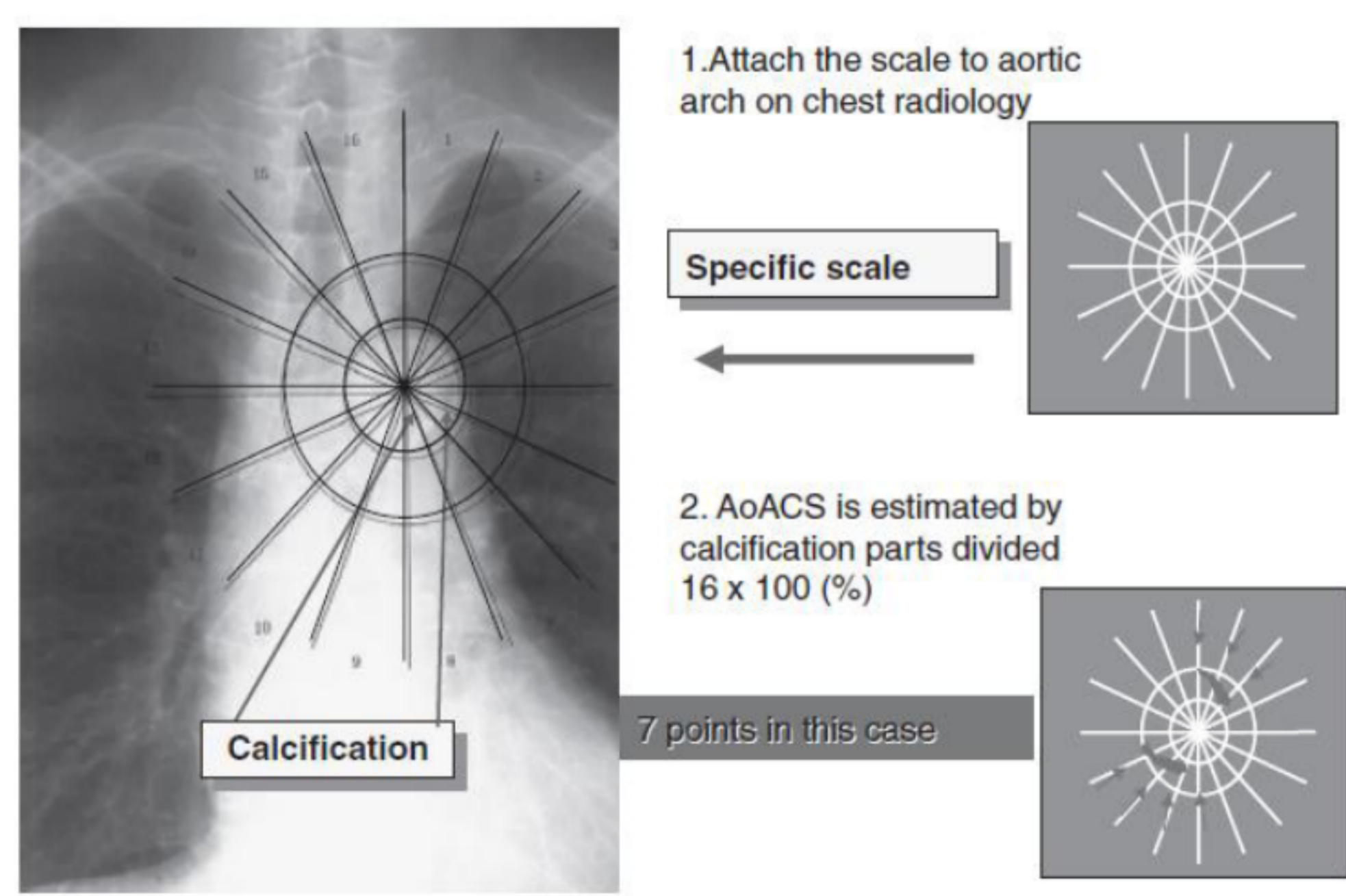


Figure 1. Estimation of the AoACS

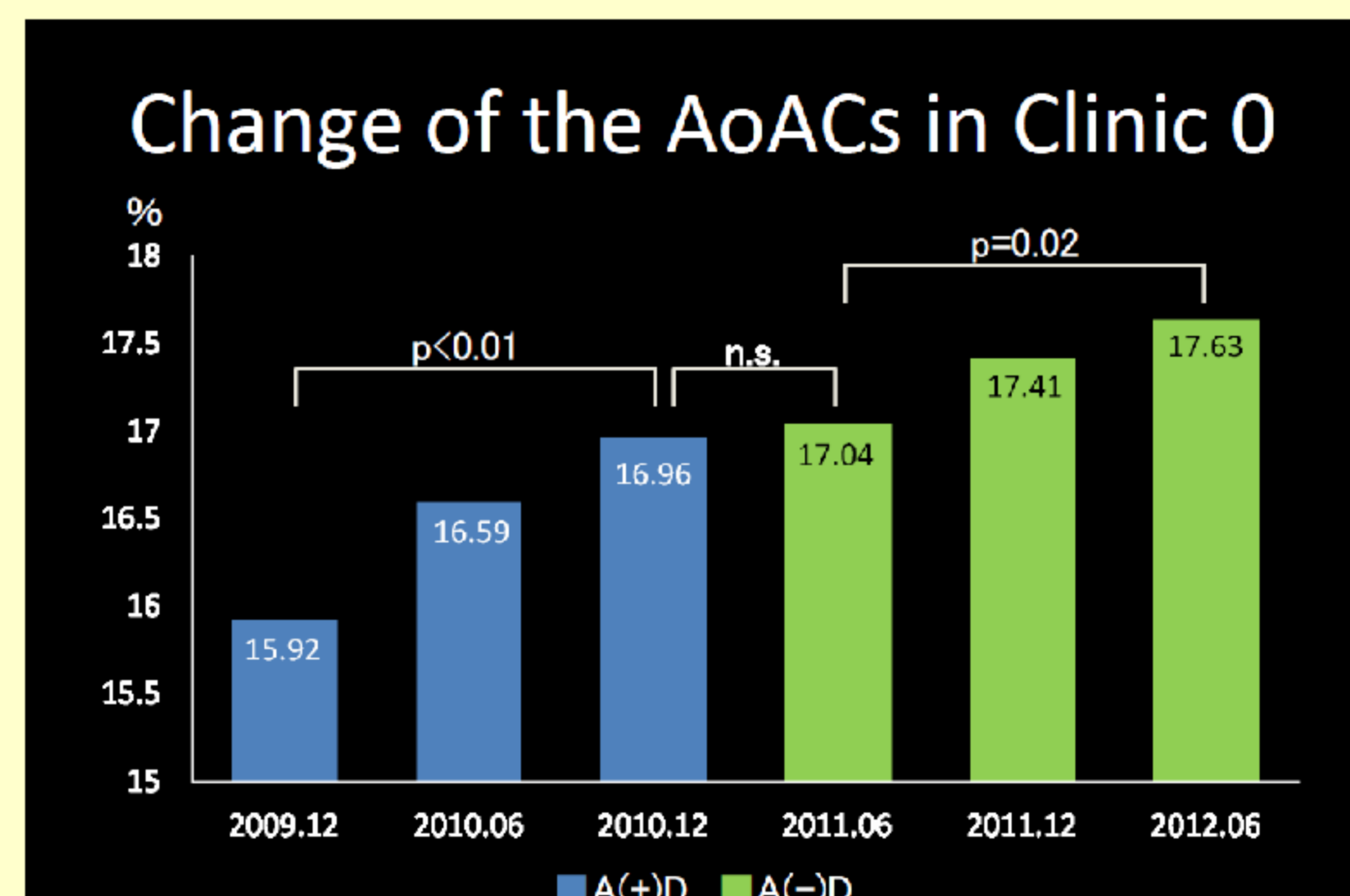
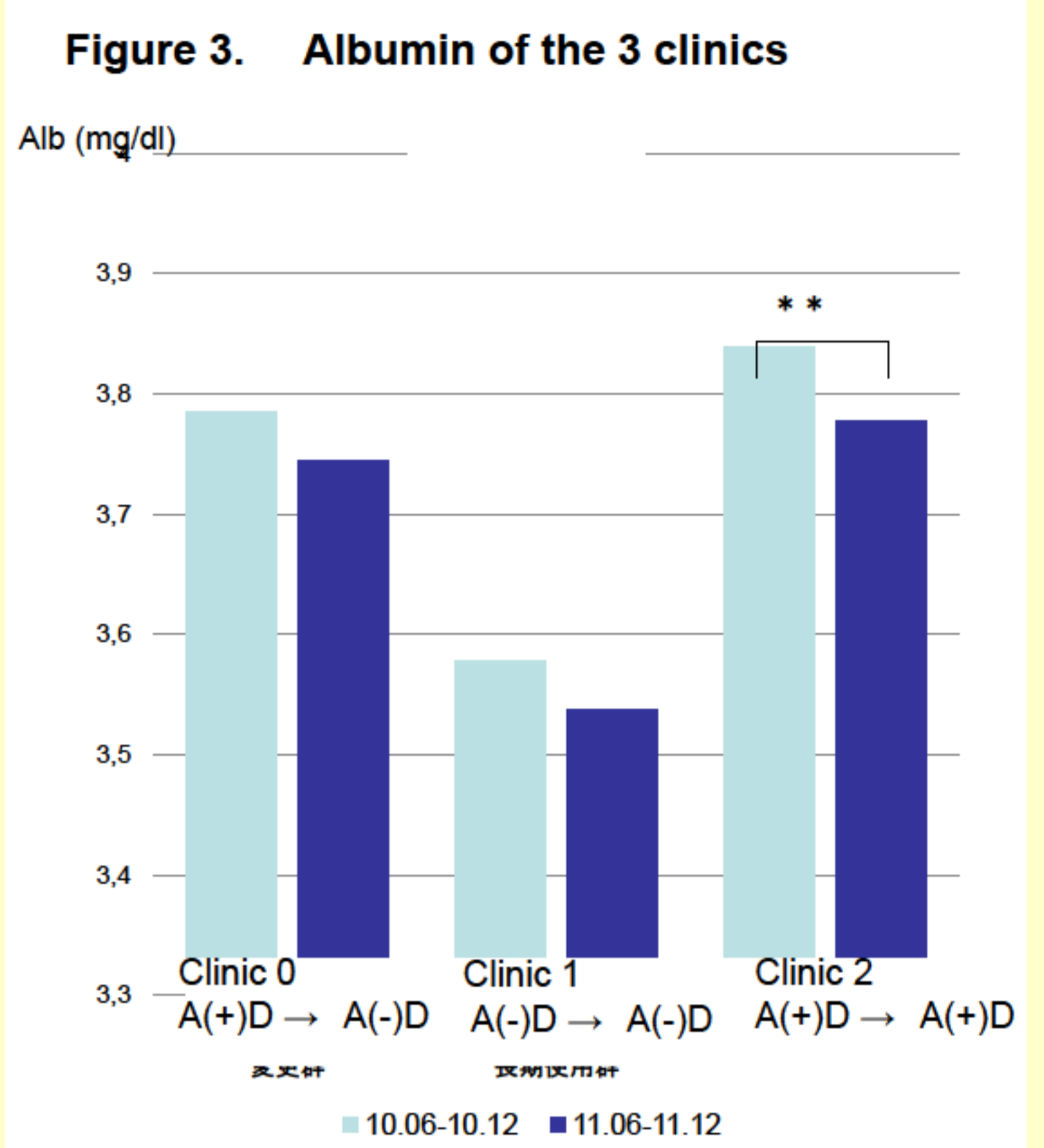
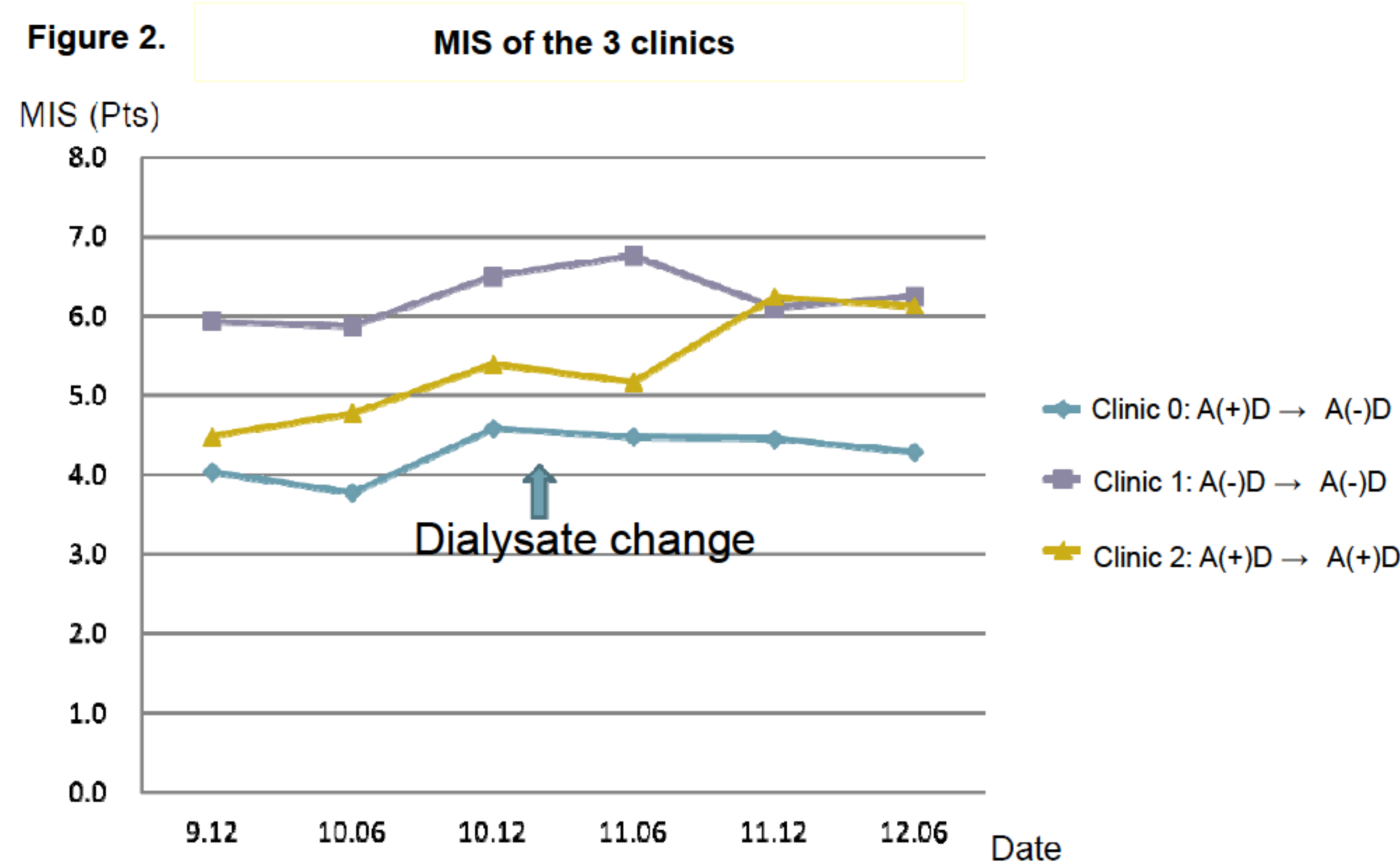


Figure 4.

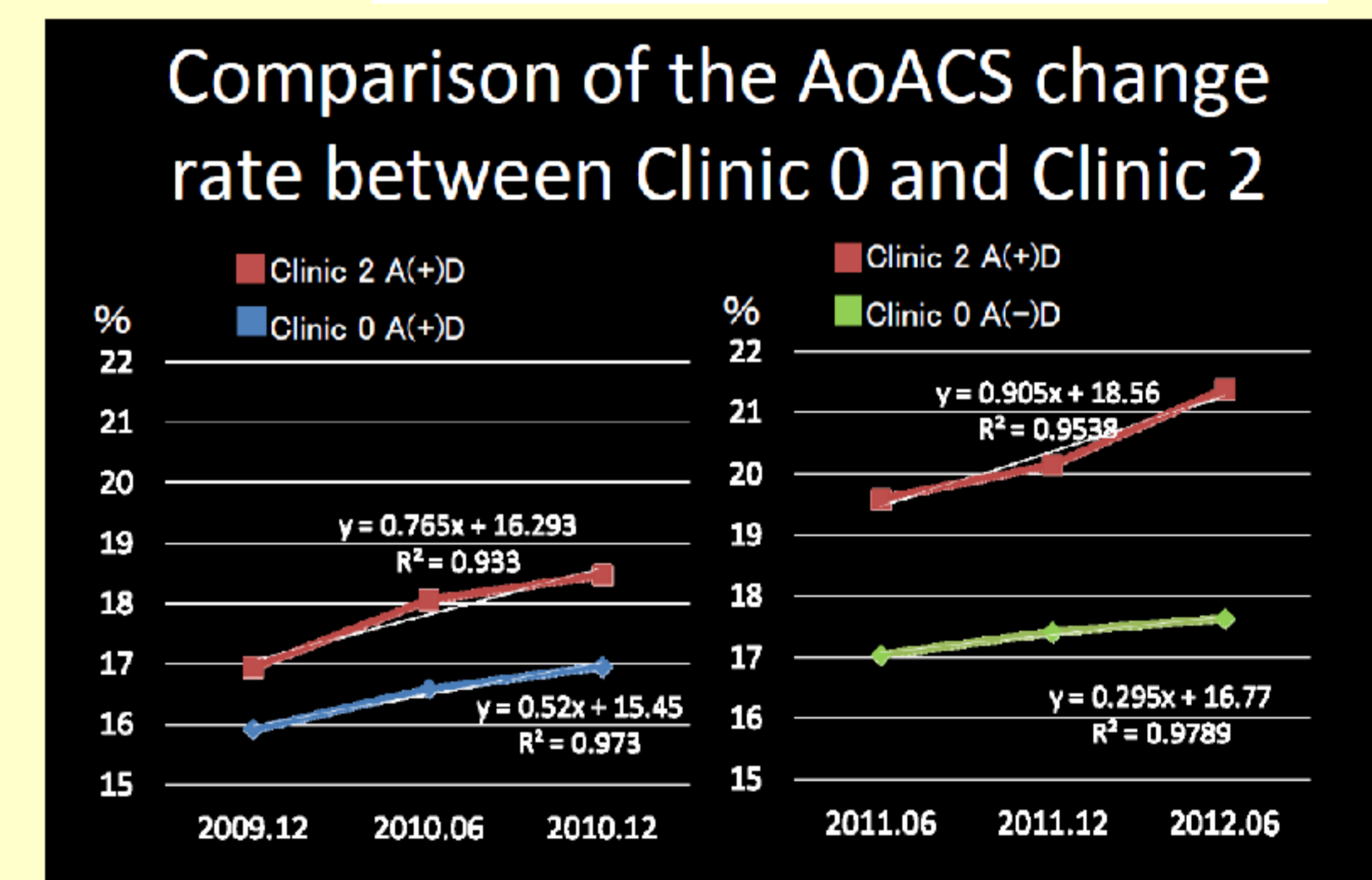


Figure 5.

RESULTS

The frequency of intra-dialysis hypotension and the degree of subjective symptoms were not changed (data not shown). The nutritional status was well maintained in all follow-up periods in spite of aging (Figure 2 and 3). The calcification of aortic arch was worsened with time during the observation period (Figure 4). However, the calcification rate was decelerated after the dialysate switch to A(-)D in the clinic 0 (AoACS score change rate: 1.04%/year vs. 0.60%/year). On the other hand, the calcification rate was not changed in the clinic 2 which continued to use A(+D) (Figure 5).

DISCUSSION

Acetic acid is considered as a cause of micro-inflammation in patients receiving hemodialysis. Recently A(-)D was marketed in Japan and used in a lot of dialysis center. Some expert physicians give warning that there might be a risk of vascular calcification associated with A(-)D. In this study, we couldn't find the risk of vascular calcification. And then there were no adverse effects on nutrition. Beneficial effects to intra-dialysis hypotension and subjective symptoms were not recognized.

CONCLUSION

These results suggest that hemodialysis using A(-)D might contribute to preventing vascular calcification and leading to maintenance of good nutrition.

REFERENCES:

- (1) Kalantar-Zadeh K, et al. A malnutrition-inflammation score is correlated with morbidity and mortality in maintenance hemodialysis patients. *Am J Kid Dis* 2001; 38(6): 1251-1263.
- (2) Ogawa T, et al. Simple evaluation of aortic arch calcification by chest radiography in hemodialysis patients. *Hemodialysis International* 2009; 13: 301-306

Please contact to miito@seieig.or.jp. URL: <http://www.seieig.or.jp/>

