SERUM DEHYDROEPIANDROSTERONE SULFATE IS ASSOCIATED WITH SKELETAL MUSCLE MASS, ARTERIAL STIFFNESS, AND DEPRESSIVE MOOD IN JAPANESE MALE HEMODIALYSIS PATIENTS.

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OBJECTIVES

The dialysis population is aging. There is a clear age-related declined in dehydroepiandrosterone sulfate (DHEAs) and this has suggested that a relative deficiency in this steroid may be causally related to the development of a series of diseases associated with aging including cardiovascular diseases, osteoporosis, and depressive mood.
The aims of this study were to examine the effect of serum DHEAs on body composition and aging-associated diseases in hemodialysis patients.

METHODS

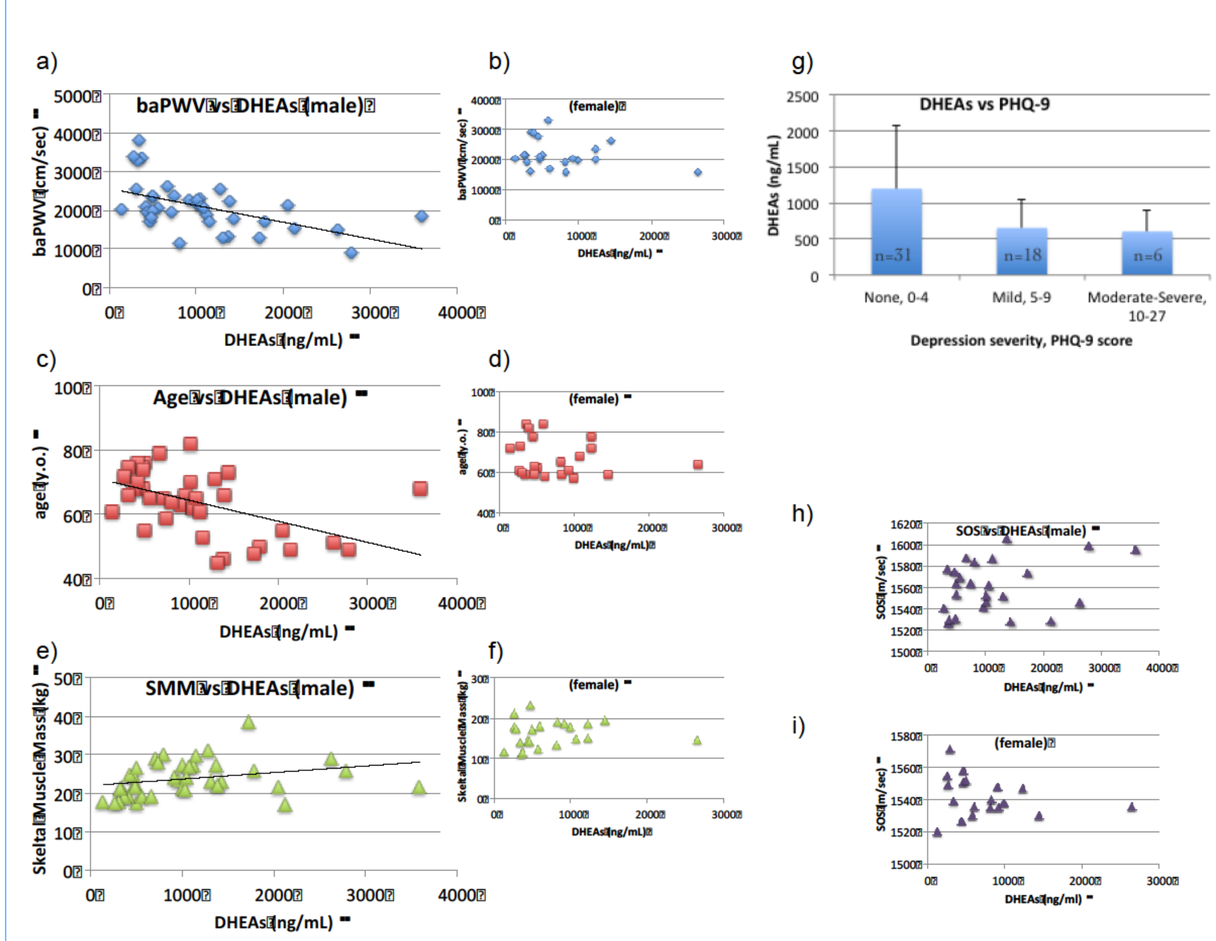
Cross sectional observational study comprising 61 hemodialysis patients. (table)
Serum DHEAs levels were measured by radioimmunoassay.
The Inbody S20 Body Composition Analyzer was used for bioelectrical impedance analysis.
Brachial-ankle pulse wave velocity (baPWV) and quantitative ultrasound of the calcaneus were measured.
Depressive symptoms were ascertained with the Patient Health Questionnaire (PHQ-9).

Table. Characteristics of Subjects

		Total	Male	Female
n		61	39	22
DM		27	20	7
age	years old	65.2±9.6	64.1±9.8	67.2±8.9
Height	cm	157±10.6	162.9±6.7	146.5±7.7
Dry Weight	kg	55.7±12.2	59.9±11.7	48.1±8.8
Body Mass Index	kg/m2	22.4±3.4	22.5±3.4	22.4±3.4
Skeletal Muscle Mass	kg	21.0±5.5	23.8±4.6	16.2±3.2
Waist-Hip Ratio		0.95±0.05	0.93±0.04	0.97±0.04
Percent Body Fat	%	28.7±9.3	25.6±8.6	34.3±7.5
ECW-TBW Ratio		0.396±0.009	0.396±0.01	0.397±0.009
serum DHEAs	ng/mL	944±704	1059±753	739±550
Hemoglobin	g/dL	9.8±1.2	9.8±1.2	9.9±1.3
serum albumin	g/dL	3.7±0.3	3.7±0.3	3.7±0.2
serum creatinine	mg/dL	10.7±2.5	11.5±2.3	9.4±2.3

ECW, Extracellular Water; TBW, Total Body Water

Figure



RESULTS

The mean DHEAs levels of the male versus the female were 1059 versus 739 ng/mL (table).
DHEAs correlated negatively with age ($p<0.001$) and baPWV ($p<0.001$), and positively with skeletal muscle mass ($p<0.01$) in men, but not in women (figure a-f).
In patients with higher scores (5 or over) on the PHQ-9, the levels of DHEAs were significantly lower (640ng/mL) than the levels in other patients (1197ng/mL) (figure g).
There were no significant associations between DHEAs and the values of calcaneal speed of sound (SOS), which is correlated with bone density (figure h and i).

CONCLUSIONS

In male dialysis patients, the lower levels of DHEAs were associated with aging process, such as decreased skeletal muscle mass, increased arterial stiffness, and depressive mood. Large prospective trials and intervention studies are needed to better assess these benefits of DHEAs in male dialysis patients.

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