The role of DHEAS in diagnosis of subclinical hypercortisolism in patients with adrenal incidentalomas

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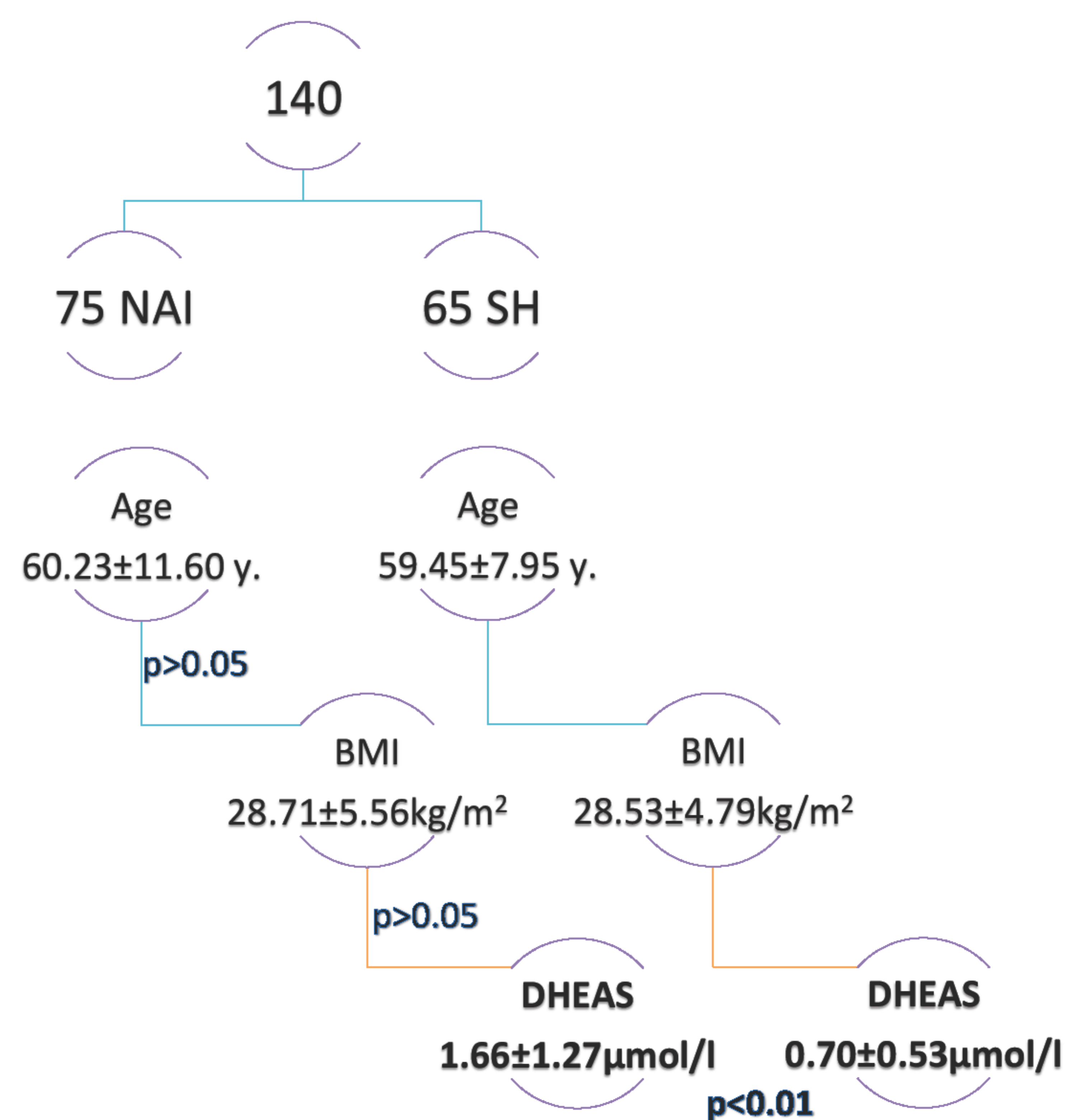
KLINIČKI CENTAR SRBIJE

INTRODUCTION

At present there are no unified diagnostic criteria for subclinical hypercortisolism (SH) in patients with adrenal incidentalomas (AI). Recently it has been proposed that an age and gender specific DHEAS ratio (calculated by dividing DHEAS by the lower limit of the respective reference range) has a significant diagnostic value in detection of SH. The aim was to evaluate the value of DHEAS as a diagnostic tool for SH.

METHODS

We evaluated 140 AI patients admitted to Department for obesity, reproductive and metabolic diseases, Clinic for endocrinology, diabetes and metabolic diseases, Clinical centre of Serbia. SH was diagnosed based on two out of three criteria: 1mg overnight dexamethasone cortisol (1mg dex) ≥ 83nmol/l, suppressed ACTH (below 14ng/l) and midnight cortisol ≥150nmol/l. Seventy-five patients had nonfunctional AI (NAI), mean age 60.23±11.60 years, mean BMI 28.71±5.56 kg/m^2 and mean DHEAS 1.66±1.27 μmol/l. Sixty-five patients had SH, mean age 59.45±7.95 years, BMI 28.53±4.79 kg/m^2, DHEAS 0.70±0.53 μmol/l. We used Mann-Whitney U test, ROC curve and linear regression analysis.

RESULTS

There was no significant difference in terms of age and BMI (p>0.05). DHEAS and DHEAS ratio levels were significantly lower in patients with SH (p<0.001). However, we could not identify the value that would be specific and/or sensitive enough for the detection of SH. Univariate analysis with 1mg dex being the dependent showed that both DHEAS (p=0.004, β=-.250) and DHEAS ratio (p=0.004, β=-.252) had a significant predictive value. However, this significance got lost in the multivariate regression analysis showing that the only significant predictors were midnight cortisol (p<0.001, β=0.627) and ACTH (p=0.003, β=-.203).

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75 NAI   65 SH

Age 60.23±11.60 y.   Age 59.45±7.95 y.

p>0.05

BMI 28.71±5.56kg/m^2 BMI 28.53±4.79kg/m^2

p>0.05

DHEAS 1.66±1.27μmol/l   DHEAS 0.70±0.53μmol/l

p<0.01

	β	Sig.
DHEAS	-.250	**0.004**
DHEAS ratio	-.252	**0.004**

CONCLUSION

Even though our study did not identify the specific cut off DHEAS value for diagnosis of SH, DHEAS proved to be significantly lower in SH than in NAI making it a valuable additional diagnostic tool for SH.