

노인재활

발표일시 및 장소 : 10 월 26 일(금) 14:55-15:05 Room C(5F)

OP2-2-5

Dehydration as an Etiologic Factor of Halitosis : a case control study

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Background :

Salivation is considered to be an important factor in the control of halitosis, and the amount of salivation has been shown to be closely related to the level of hydration. The purpose of our study was to evaluate the relationship between dehydration and halitosis.

Methods

Twenty healthy young women with no dental problem were recruited. All participants were asked to dehydrate and then over-hydrated. After inducing each hydration, the severity of hydration and halitosis factor(organoleptic scores, amounts of resting and functional saliva, gas examinations, tongue coatings) were measured. Hydration statuses were graded as dehydration, normal, or over-hydration according to urine osmolality. Cross sectional study with a cross over design was used.

Results

A dehydrated status was associated with the higher organoleptic scores than a normal or over-hydrated status(1.75 ± 0.75 vs. 0.87 ± 0.63 and 0.65 ± 0.53 , respectively, $P < 0.05$). Mean values of CH₃SH, (CH₃)₂S in gas chromatography for a dehydrated, normal, and over-hydrated status were 11.70 ± 37.00 , 6.75 ± 13.50 , 2.80 ± 5.87 and 10.50 ± 15.59 , 7.25 ± 10.87 , 1.50 ± 2.55 ppbv respectively, $p > 0.05$). (CH₃)₂S($r = 0.382$, $p = 0.066$) showed moderate correlations with dehydration status. The resting salivation rates were relatively lower for a dehydrated status than for a normal or over-hydrated status($p > 0.05$), and tongue coating Results were also higher for a dehydrated status($p > 0.05$).

Conclusions

Dehydration status appears to be positively correlated with a low resting salivation rate, high gas chromatography Results. This shows that dehydration might be an etiologic factor of halitosis.

Table 1. Demographic data of the participants

	Dehydration*	Normal hydration _†	Over-hydration _‡	P value
Number	17	6	17	
Age	29.30±3.30	33.00±6.06	31.10±4.46	0.883
Body weight	50.50±1.72	51.50±2.38	51.10±1.73	0.867
Hydration status : urine osmolality	913.94±64.98	749.50±40.00	148.12±85.43	0.000

Table 2. Halitosis severity according to hydration status

Hydration status			Dehydrated	Normal	Over-hydrated
Halitosis severity (Organoleptic score)			1.71±0.79*	0.75±0.61*	0.61±0.55*
Halitosis factor	Salivation rate	Resting	0.39±0.27	0.31±0.24	0.50±0.34
		Functional	1.37±0.69	0.87±0.35	1.50±0.95
Gas chromatography	Gas	H ₂ S	8.53±6.16	7.83±4.45	8.65±8.57
		CH ₃ SH	13.65±38.53	4.50±11.02	1.94±4.58
		(CH ₃) ₂ S	10.24±15.24	8.50±11.10	1.12±2.17
	Tongue coating		2.00±0.94	2.00±0.82	1.70±0.48
BB checker		Oral Gas	24.0±18.59	14.00±3.74	25.70±16.64
		Exhalation Gas	52.30±35.57	50.25±27.47	55.50±21.73

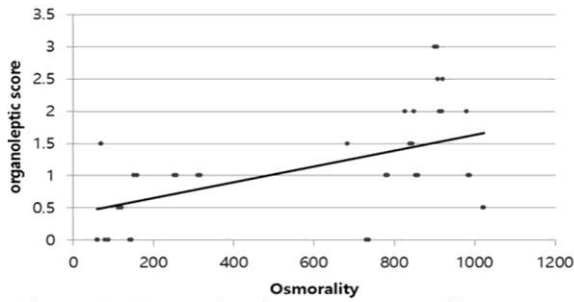
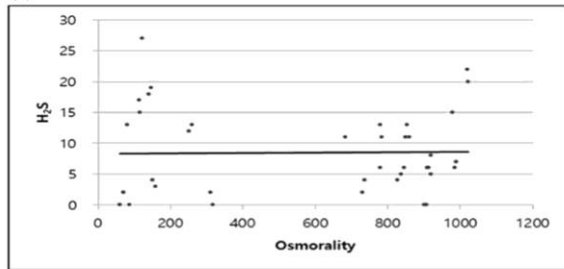
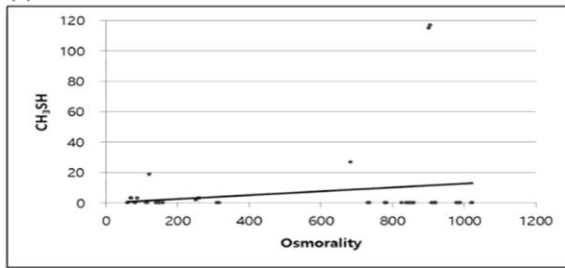


Figure 1. Organoleptic scores according to the hydration status ($r = 0.540$, $p = 0.000$)

(a)



(b)



(c)

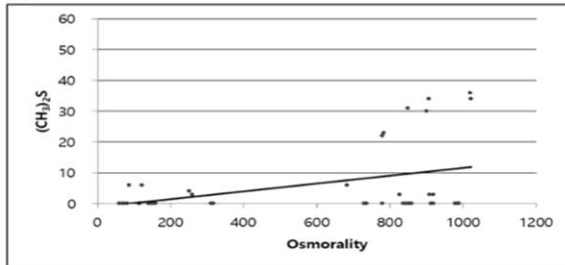


Figure 2. The gas chromatography analysis of the participants according to the dehydration status. CH₃SH ($r = 0.181$, $p = 0.264$) and (CH₃)₂S ($r = 0.410$, $p = 0.009$) showed the positive correlation according to the dehydration status of the participants

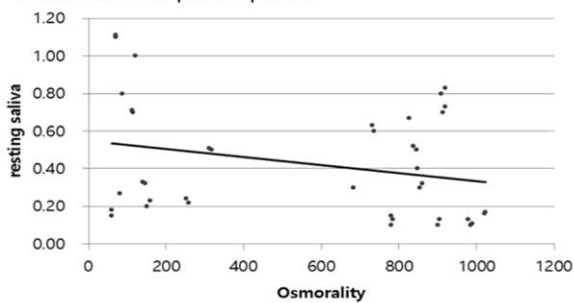


Figure 3. Resting salivation measurements according to the dehydration status. There was a weak negative correlation between dehydration and resting salivation rate ($r = -0.267$, $p = 0.096$)