尿渗透压测定与阴阳虚实辨证的关系

——附 110 例病人尿渗透压分析

内蒙古中蒙医研究所综合实验室 宋一亭 顾 铠 刘彩英

内容提要 本文以尿渗透压值为指标观察了中医辨证与尿渗透压水平的关系。在 110 例病人中，发现阳虚组和阳虚挟实组、阴阳两虚组和阴阳两虚挟实组尿渗透压平均值均明显低于正常对照组；所有虚证组和虚中挟实组均明显低于实证组；且阳虚组和阴阳两虚组均明显低于阴虚组。此结果提示尿渗透压测定在阴阳虚实辨证中有一定意义。

尿渗透压(简称"尿渗")是衡量肾髓质尿浓缩功能的重要指征之一[1]。不久前在对正常人和某些阴阳失衡(阴虚火旺和命门火衰)病人十二时辰尿渗曲线的观察分析中发现肾脏的尿稀释—浓缩功能明显受阴阳盛衰的影响[2]。为证实此规律是否在更多的疾病中具有普遍意义，我们观察了18种常见疾病的尿渗与阴阳虚实辨证的关系。考虑到十二时辰尿渗曲线要求条件比较严格，操作又较繁琐，且常会影响病员的休息和睡眠，难以为大多数患者所接受，故改用禁水禁食 8 小时后浓缩尿的尿渗值为指标以反映肾脏的尿浓缩功能，结果发现尿渗测定在阴阳虚实辨证中具有重要意义。

辨证分组和实验方法

一、辨证分组：110 例病例大都选自本院住院病人，部分来自门诊。观察病例中剔除了一周内曾用过强心、利尿、补液、脱水以及其他影响水—电解质平衡药物的患者。全部病例均由两名医师在测试尿渗前分别辨证，结果一致或基本一致者列入观察。辨证先按虚实分为虚、实和虚中挟实等三个证型。虚证中又分为三组：阳虚组 14 例，男性 9 例，女性 5 例，平均年龄 58±2 岁(M±SE 下同)；阴虚组 11 例，男性 7 例，女性 4 例，平均年龄 49±5 岁；阴阳两虚组(简称"两虚组")24 例，男性 15 例，女性 9 例，平均年龄 53±2 岁。虚中挟实证中又分为：阳虚挟实组 19 例，男性 15 例，女性 4 例，平均年龄 52±3 岁；阴虚挟实组 17 例，男性 13 例，女性 4 例，平均年龄 51±3 岁；两虚挟实组 8 例，男性 7 例，女性 1 例，平均年龄 53±3 岁。实证组中包括气滞血瘀、风痰阻络、痰热壅肺、膀胱湿热、肝胆郁热和癥瘕积聚等，因例数较少统归于实证组，共17例，男性 13 例，女性 4 例，平均年龄 49±2 岁。此外选择正常人 20 例为正常对照组，男性 12 例，女性 8 例，平均年龄 36±2 岁。110 例病人的临床诊断以冠心病（34 例）、脑中风后遗症(28 例)、肺心病(10 例)、心肌梗塞(8 例)、高血压（7 例）等为多，共包括 18 种疾病。

二、实验方法：试验前一天自晚 9 时起禁水禁食，次晨 6 时排空小便，1 小时后留全尿供检。用 FM-3 型冰点渗透压计测定尿渗。每次测试前用标准液校准仪器，仪器重复误差在±1%之内。测试标本静置 30 分钟后准确取其上清液 1 ml，于 2～4 小时内完成测试。

结 果

一、经各辨证组尿渗均值的变异数分析，各组尿渗均值间总差异非常显著($F=14.534$, $P<0.01$)。组间比较，阳虚与阳虚挟实组，两虚和两虚挟实组尿渗均值都明显低于正常组($P<0.01$ 或 $P<0.05$)。阴虚和阴虚挟实组及实证组与正常组无统计学差异；所有虚证组及虚中挟实组尿渗均值都显著低于实证组($P<0.01$ 或

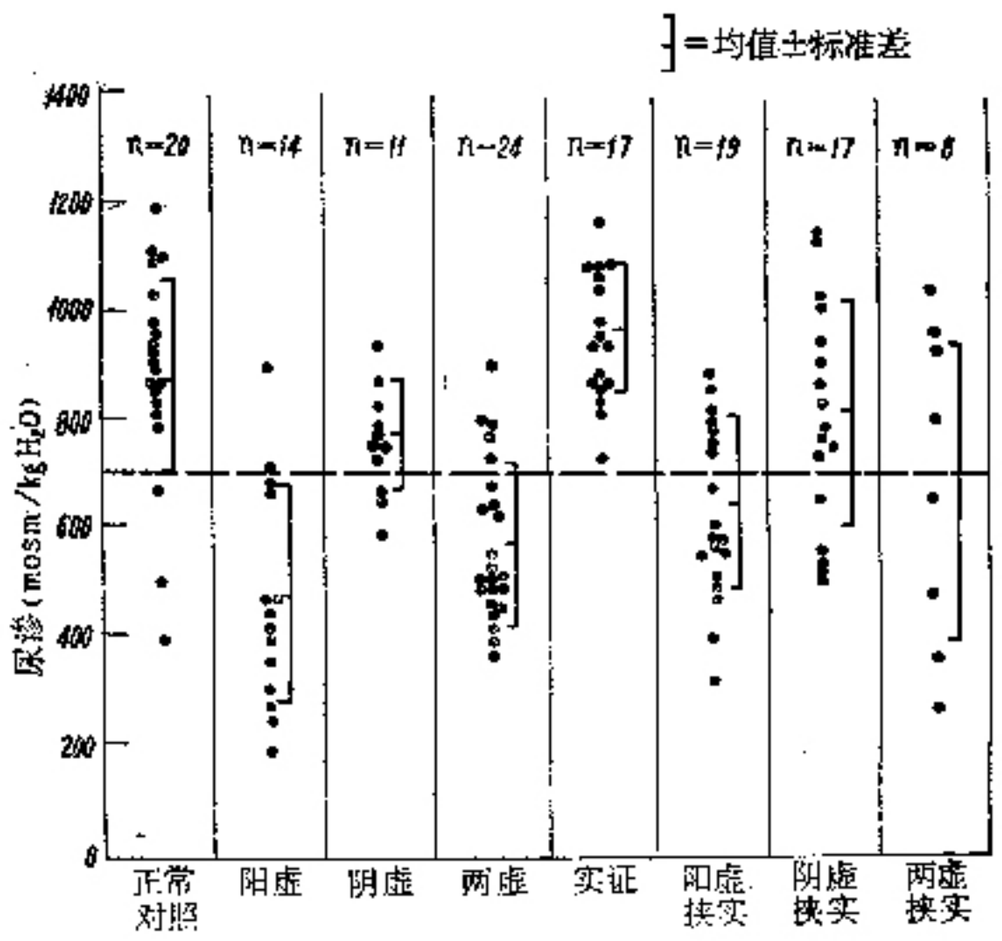
P＜0.05)；各虚证组尿渗均值都不同程度地低于其相应的虚中挟实组，其中阳虚与阳虚挟实组间差异显著（P＜0.05)，两虚与两虚挟实组以及阴虚与阴虚挟实组间差异不显著（P＞0.05)；阳虚和两虚组尿渗均值都显著低于阴虚组(P＜0.01或P＜0.05)，而前两组间无明显差异；阳虚挟实组尿渗均值明显低于阴虚挟实组(P＜0.05)，其余未见统计学差异(见附表)。

附表 各辨证组尿渗均值的变异数分析

组别		尿渗 (mOsm/kgH_2O) M±SE	总变异数分析 F值	总变异数分析 P值	组间变异数分析 比较组别	组间变异数分析 P值
正常对照组 A (n=20)		884±41			A:B	＜0.01
					A:C	NS
					A:D	＜0.01
					A:E	＜0.01
					A:F	NS
虚证	阳虚组 B (n=14)	475±56			A:G	＜0.05
					A:H	NS
	阴虚组 C (n=11)	774±31			B:C	＜0.01
					B:D	NS
					B:E	＜0.05
	两虚组 D (n=24)	578±31	14.534	＜0.01	B:F	＜0.01
					B:G	＜0.01
					B:H	＜0.01
					C:D	＜0.05
虚中挟实	阳虚挟实组 E (n=19)	643±38			C:E	NS
					C:F	NS
					C:G	NS
					C:H	＜0.05
	阴虚挟实组 F (n=17)	818±50			D:E	NS
					D:F	＜0.01
					D:G	NS
					D:H	＜0.01
实	两虚挟实组 G (n=8)	697±104			E:F	＜0.05
					E:G	NS
					E:H	＜0.01
实证组 H (n=17)		969±29			F:G	NS
					F:H	＜0.05
					G:H	＜0.01

注：NS表示P＞0.05，n＝例数。

二、各辨证组尿渗分布情况，若以正常组尿渗均值（884mOsm/kgH_2O）±1倍标准差(184 mOsm/kgH_2O)之下限(700mOsm/kgH_2O)作为标准线，正常组中有85%(17/20)尿渗值在该线之上，而阳虚和两虚组大部分落在该线以下，落在该线以上者分别只占14.3%(2/14)和28.8%(5/24)，与正常组间差异非常显著(P均＜0.001)。阴虚组和实证组大部或全部落在该线之上，分别占72.7%(8/11)和100%(17/17)，与正常组无差异，而与阳虚组和两虚差异非常显著（P＜0.001～0.05)。虚中挟实三组尿渗值分布离散度较大，各组间未见明显差异（见附图)。



附图 各辨证组尿渗分布图

讨 论

从阴虚火旺和命门火衰病人十二时辰尿渗曲线观察中发现，阴虚火旺病人尿液倾向于浓缩，十二时辰尿渗均值为881±31mOsm/kgH_2O(M±SE)；命门火衰病人尿液趋于稀释，十二时辰尿渗均值为463±43mOsm/kgH_2O，因而推测肾脏对尿液的调节与人体阴阳虚实有关[2]。为证实此推论是否在多种疾病中具有普遍意义，本实验观察了18种疾病病人禁水禁食8小时后尿渗与阴阳虚实辨证的关系。结果发现不同辨证组间尿渗水平确有显著差别。从阴阳角度分析，凡有阳虚火衰表现各组如阳虚组、阴阳两虚组、阳虚挟实组和两虚挟实组平均尿渗值都显著低于正常组(P＜0.01～0.05)；凡无阳虚火衰见证各组如实证组、阴虚组和阴虚挟

实组平均尿渗值都与正常无明显差异，提示阳虚火衰病人肾脏的尿浓缩功能有所减退，而非阳虚火衰者该功能基本正常。由此可见，尿渗测定确有助于阴虚和阳虚之鉴别。此外，从虚实角度看，虚证各组尿渗均有低于正常之趋势，而实证组又有高于正常组的倾向。所有虚证及虚中挟实组尿渗均值又都明显低于实证组（$P<0.01\sim0.05$）。而且纯虚证组又各自低于相应的虚中挟实组。这些事实表明，肾脏的尿稀释与尿浓缩功能既受“正虚”的影响，也受“邪实”的干预，因而尿渗测定在区别虚证和实证方面也有一定意义。

为便于分析，我们将正常组尿渗均值±1倍标准差之下限（700mOsm/kgH_2O）作为标准线用以衡量肾脏的尿浓缩功能是否健全。该值与文献记载正常人8小时禁水后尿渗之低限（600mOsm/kgH_2O）相仿。根据本实验结果，健康人8小时禁水后尿渗值一般不应低于700 mOsm/kgH_2O，低于此值意味着肾髓质尿浓缩功能低下，并提示“阳虚火衰”之可能。以低于该值判断阳虚和阴阳两虚证，与临床辨证的符合率分别为85.7%和79.2%；以高于此值来判定阴虚证和实证，与临床辨证的符合率分别可达72.7%和100%。以上结果支持在多种疾病中肾脏对尿液的调节作用与人体阴阳虚实有关的假说，并为尿渗测定作为阴阳虚实辨证的一项参考指标提供了实验依据。

（本工作得到本院1、2、4、6等病区同志的支持，谨此致谢）

参 考 文 献

1. 上海第一医学院，等. 人体生理学. 第1版. 北京：人民卫生出版社，1978:363.
2. 宋一亭，等. 阴虚火旺、命门火衰病人十二时辰尿渗透压和尿量曲线的初步观察. 中医杂志 1983; 24(11):69.

中西医结合治愈感染后脑炎一例报告

黑龙江省鸡西矿务局总医院　常文学　刘玉芳

病历摘要　庄××，男，8岁，病历号：157028。因水痘一周后高烧、头痛呕吐、惊厥昏迷2天，以感染后脑炎于1983年1月22日急转我院。病初无明显发烧及咳嗽等上感症状，唯皮疹遍布全身，但很快结痂，无皮肤感染。一周后，突然高热达40°C，伴剧烈头痛，呕吐一次，呈喷射状，反复抽搐，昏迷不省。体检：神志不清，呼吸28次/分，体温39.2°C，皮肤可见大量结痂，双瞳孔缩小为1 mm、等大，对光反射迟纯，未见眼睑下垂面瘫等征，无吞咽反射，颈强(±)，心肺无著变，肝于肋下1.5cm、质软，脾未触及，腹壁反射、提睾反射及腱反射均弱，病理反射未引出。化验：脑脊液除蛋白定量为46mg%外，余均正常；白细胞总数14,900，中性粒细胞62%，淋巴细胞38%，二氧化碳结合力40.5vol%，尿素氮24mg%，钾4.5mEq/L，钠148mEq/L，钙4.5mEq/L，氯108 mEq/L，尿便常规及肝功能检查均正常。诊断：感染后脑炎。

治疗经过　入院后立即予以吸氧、镇静、抗炎、激素、能量合剂、维生素C、甘露醇、钙剂、对症、鼻饲等处理，3天后病情微有好转，体温稍降。但仍反复抽搐，意识不清，大便秘结，尿黄、面赤、舌质红绛、苔薄而干，脉弦数。中医按肝热虚风内动，投以清热育阴熄风之剂（生地、麦冬、白芍、当归、桑枝各10g，羚羊2.5g，钩藤、山栀子、生龙牡、玄参各15g，丹皮5 g）。上方3剂治疗3天后，热退，抽搐减轻。但仍意识不清，舌苔淡薄，脉濡缓。据此，其证似属湿热酿痰蒙敝清窍，继投以豁痰开窍熄风之剂（菖蒲、郁金、麦冬、远志、桑枝、白术、茯苓、鸡血藤各10g，陈皮7 g）。一周后患儿病情明显好转，抽止神清，但伴运动性失语，随拟豁痰开窍解语之剂（菖蒲、郁金、远志、茯苓、陈皮、桑枝各10g，赤芍、葛根各5 g，南星3 g，全蝎2 g），3剂后会说话，且能独立坐起。患者至住院第18天可独立行走，于1983年2月11日痊愈出院。随访半年患儿运动功能及智能如定向力、自知力、计算力、分析综合力、远近记忆力等均正常。

体　会　感染后脑炎又称继发脑炎，过敏性脑炎或急性脱髓鞘性脑炎，在水痘患者中很少见，其发病率为1/1,000～1/10,000。目前对其发病机理还不太清楚，可能为水痘病毒直接侵犯中枢神经系统或水痘病毒感染引起的脑实质变态反应。水痘本身预后良好，但合并脑炎者则预后严重。本病例昏迷与反复抽搐半月之久，前后住院治疗21天即痊愈出院，且无后遗症，说明中西医结合治疗本病是有苗头的。

Research on the Mechanism of Pulling and Shaking Manipulation to Treat Lateral Condyle Humerus Fracture

Kong Fanjin (孔繁錦), et al
Department of Orthopedics, Anhui Provincial Hospital, Hefei

From June 1978 to December 1982, the authors used pulling and shaking manipulation for the first time to treat 34 children with lateral condyle humerus fracture. All but two of these patients got satisfactory reduction. One of the two unsatisfactory cases sought treatment 13 days after the fracture and the other with marked swelling. The mechanism of reduction was studied through clinical observation, fluorescopic video tape analysis and direct observation in surgical operation. The result is as follows: (1) Manipulation analysis: prone and supine pulling and shaking manipulation was employed to pull the bony fragment toward lateral elbow side. It turned the bony fragment medially and enlarged the angle to the maximum and then reduced the bony fragment to the original position by pressing it with the thumb. (2) The manipulation corrected the bony fragment position by pulling the common tendon of extensor muscles, and pulling and shaking through pronation and supination drew the bony fragment to a straight line. Pronation or supination had to be decided according to the position of bony fragment. If the bony fragment was located at elbow anterior, supination was used. If it was located at elbow posterior, pronation was used. The purpose of pulling or shaking was to widen the joint space and make the extensor muscle group have pulling action. (3) The authors proved that although the strong muscular contraction might make the bony fragment turn over, it could stimulate the contraction force to turn the bony fragment over again if the latter was wrongly placed for proper reduction. (4) Accurate and adequate thumb press was the key to success. At first, the bony fragment was fixed and drawn in a straight line, and then after pulling and shaking so as to increase the medial turn to maximum, it was pressed with the thumb to the right place for reduction.

(Original article on page 411)

A Preliminary Study on the Correlation Between Types of Chronic Glomerulonephritis Classified by TCM and Pathologic Findings of Renal Biopsy

Shi Saizhu (施賽珠), Zhang Lingjuan (张玲娟)
Department of TCM, Huashan Hospital Affiliated to the Shanghai First Medical College

Forty-three cases of chronic glomerulonephritis have been studied. 14 of 18 patients with mesangial proliferative glomerulonephritis belong to the type of deficiency of Yin of liver and kidney (DYLK). Most patients with membranous and membranoproliferative glomerulonephritis are found to be of the type of insufficiency of Yang of the spleen and kidney (IYSK). The correlation between clinical manifestations and classification of symptom-complexes based on TCM has been analysed. The quantity of proteinuria in patients with IYSK is markedly higher than that in patients with DYLK, while the quantity of serum immunoglobulin in patients with IYSK is lower than that in patients with DYLK. The incidence of hematuria and hypertension is high in patients with DYLK. It indicates that there are different pathologic findings in various types of chronic glomerulonephritis classified by TCM. The methodology of classification with a combination of traditional Chinese medicine and western medicine is discussed in this paper.

(Original article on page 414)

The Value of Urine-Osmotic Pressure Measurement in the Differentiation of Yin, Yang, Deficiency and Excess Syndromes

Song Yiting (宋一亭), et al
Inner Mongolia Institute of TCM, Huhehaote

Using the urine-osmotic pressure value as an index we have observed the relationship between differentiation of syndromes according to TCM and the levels of urine-osmotic pressure in 110 cases. It has been found that the mean values of the urine-osmotic pressure of the Yang-insufficiency group, the Yang-insufficiency complicated with excess group, the deficiency of both Yin and Yang group and the deficiency of both Yin and Yang complicated with excess group are significantly lower than the value of the control group ($P<0.01$ or $P<0.05$); and the values of all deficiency-syndrome groups and deficiency complicated with excess groups are significantly lower than that of the excess-syndrome group ($P<0.01$ or $P<0.05$); and the values of the Yang-insufficiency group and the deficiency of both Yin and Yang group are significantly lower than that of the Yin-deficiency group ($P<0.01$ or $P<0.05$). Those results suggest that the measurement of the urine-osmotic pressure may serve as an important reference to the differentiation of Yin, Yang, deficiency and excess syndromes.

(Original article on page 417)