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糖尿病性膀胱病变的中医辨证与尿流动力学关系之探讨

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内容提要　通过60例糖尿病性膀胱病变的中医辨证与尿流动力学关系的研究，证实本组中医辨证分型符合膀胱病变发展规律，排尿功能障碍程度可以通过中医辨证作出估计，为中医辨证提供了一定的客观依据，并对其诊断、治疗和估计预后具有一定的临床意义。

糖尿病性膀胱病变系指糖尿病并发神经原性膀胱(以下简称膀胱病变)。为了探索针灸治疗本病的疗效，于1982年5月对上海市徐汇区各级医院及卢湾区打浦路地段医院664名糖尿病患者进行了超声波残余尿普查，对其中70名残余尿阳性或/及排尿功能障碍的患者，在中医辨证的基础上，又进行了尿流动力学检查，根据本病的诊断标准[1]，60例确诊为膀胱病变，总发病率为9.04%。通过普查发现中医辨证与尿流动力学关系密切。现将60例膀胱病变的中医辨证与尿流动力学的研究资料分析于下。

一般资料

本组均系确诊为显性糖尿病患者，其中胰岛素依赖型11例，非胰岛素依赖型49例。男10例，女50例。年龄24～82岁，平均58.6岁。糖尿病病程≤2年4例，＞2年32例，＞10年22例，＞20年2例。排尿功能障碍病程≤2年34例，＞2年17例，＞5年9例。空腹血糖＜150 mg%20例，150～250mg%26例，＞250mg%14例。有55例作了肌酐、尿素氮测定，39例属正常范围，16例偏高。45例作了尿培养，7例阳性(多为大肠杆菌)。20例作了排泄性尿路造影，其中3例肾积水，20例均无输尿管逆流，膀胱形态大多欠光整，或有小梁、憩室形成，排尿后有1/5～4/5造影剂残留。

根据黄美明老师经验，本组病例的辨证标准分为两型：真阴不足，肺肾气虚型(Ⅰ型)：烦渴多饮，排尿乏力，间隔延长，头晕目花，神疲乏力，短气自汗，大便干结，舌红，苔黄燥，脉细。真阴亏损，肾阳虚衰型(Ⅱ型)：口干欲饮，排尿费力，点滴而出，小腹胀满，面色㿠白，神气怯弱，腰以下冷，下肢浮肿，大便溏薄，甚则失禁，脉沉细，舌淡胖。

方法与结果

一、尿流动力学研究方法：患者排尿后外阴周围常规消毒，用16号双腔止血导尿管从尿道口插入膀胱，先测定残余尿量，然后进行膀胱测压。在测压的同时，利用四导生理记录仪上压力换能器描记膀胱内压曲线。另自制肛门电极塞塞入肛门内，肛门电极塞上电极连接在四导生理记录仪上，同步记录在膀胱容量逐渐增加时，肛门外括约肌肌电活动情况。观察排尿时有无逼尿肌与括约肌协同功能失调及内压曲线的坡度有无梗阻情况。最后进行冰水试验，注意观察膀胱对4°C冰水感觉减退的程度。尿流率测定另行检查。此外，还作了有关的神经系统检查，包括肛门反射、球海绵体肌试验、膝反射、踝反射、下肢浅感觉等。

二、结果：1.辨证分型与残余尿关系，见表1。

表1　辨证分型与残余尿关系

中医辨证	例数	残余尿(ml)				
		＜50	51～100	101～300	301～500	＞500
Ⅰ型	43	30	10	3		
Ⅱ型	17	1	5	7	3	1

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从表1可以看出，中医辨证为Ⅰ型者，膀胱残余尿大多在100ml以内，最少1例4 ml；而Ⅱ型者膀胱残余尿大多在100ml以上，最多1例达880ml。Ⅰ型与Ⅱ型之间膀胱残余尿有极显著差异(P＜0.001)。

2. 辨证分型与膀胱内压关系：本组60例膀胱内压测定，呈现感觉麻痹型神经原性膀胱的内压图有56例，其中中医辨证为Ⅰ型43例，Ⅱ型13例；呈现自主性神经原性膀胱内压图有4例，均属Ⅱ型。60例膀胱病变中医辨证分型与膀胱内压关系的内压图如下：

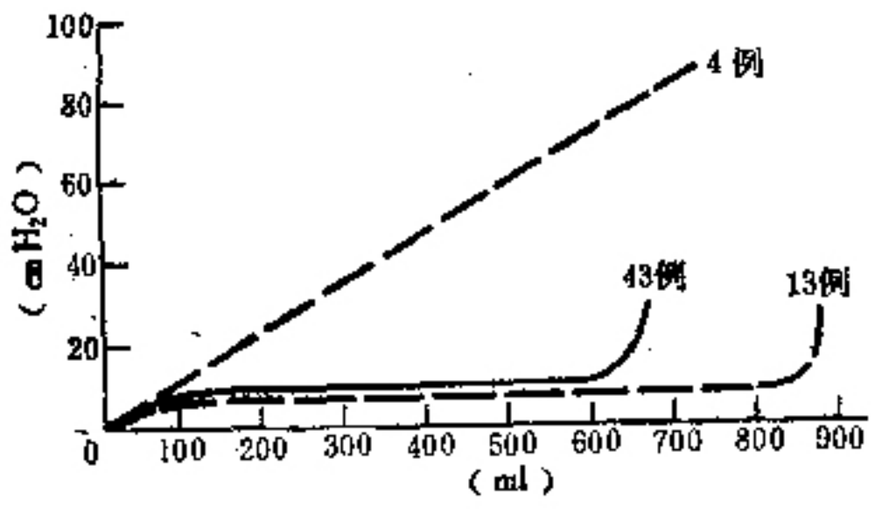

图1　辨证分型与膀胱内压关系的内压图

注——真阴不足，肺肾气虚型(Ⅰ型)

……真阴亏损，肾阳虚衰型(Ⅱ型)

从图1可以看出，膀胱病变以感觉麻痹型神经原性膀胱为多见（见43例及13例膀胱内压曲线图），在此类病人中，中医辨证Ⅱ型的膀胱容量明显大于Ⅰ型(Ⅱ型13例膀胱容量平均达860ml左右，而Ⅰ型43例平均为650ml左右)，二者有极其显著的差异(P＜0.001)。

3. 辨证分型与逼尿肌括约肌功能协调的关系：本组60例中有56例作了膀胱内压、肌电图同步检查，其中中医辨证为Ⅰ型41例，Ⅱ型15例。Ⅰ型中逼尿肌括约肌功能协同失调者37例，失调率为90.24%；Ⅱ型15例均表现为逼尿肌括约肌功能协同失调，失调率为100%。可见Ⅱ型失调率高于Ⅰ型。

4. 辨证分型与尿流率测定的关系，见表2。

表2　辨证分型与尿流率测定关系(M±SD)

中医辨证	例数	尿流率测定			
		排尿容量(ml)	MVR(ml/秒)	AVR(ml/秒)	VT(秒)
Ⅰ型	41	225.85±173.68	11.285±15.33	6.56±7.91	31.48±15.69*
Ⅱ型	17	310.59±211.82	8.81±3.58	5.42±2.80	47.97±23.85*
正常值[2]		200～300	20	10	20

*P＜0.01

从表2可以看出，本组60例中有58例作了尿流率测定，在排尿量基本属于正常的范围内，其最大尿流率(MVR)与平均流率(AVR)都低于正常，尿流时间(VT)明显延长，尿流曲线大都呈现低平或低平多波形图型(见图2)。

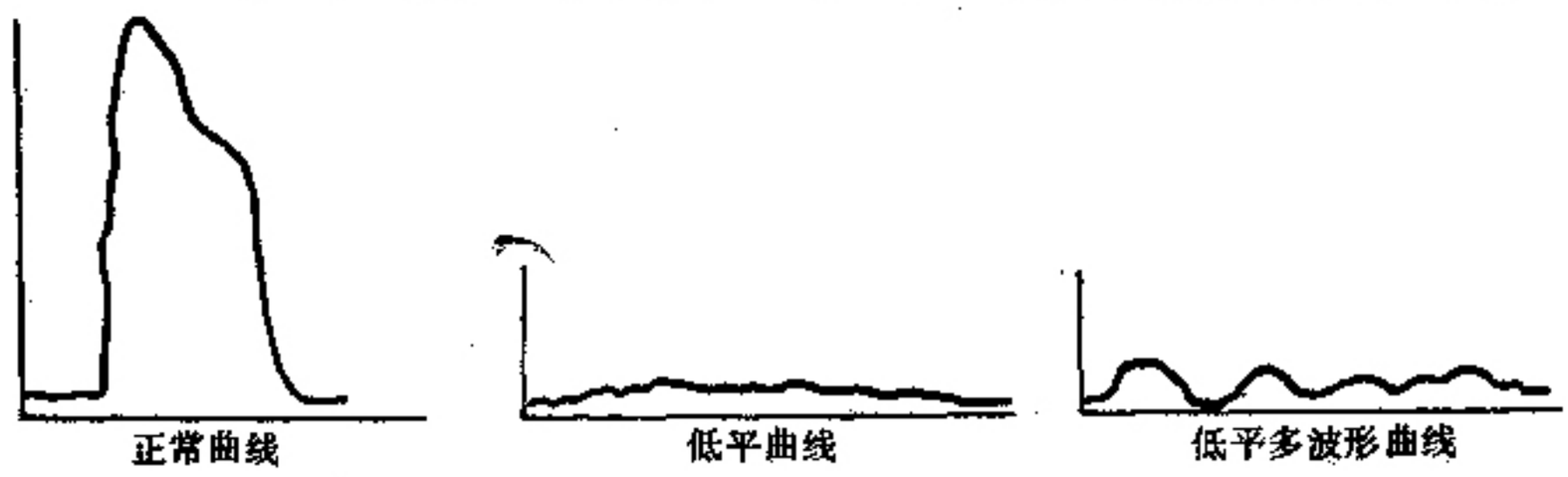

图2　尿流率曲线图

从中医辨证分型来观察尿流率变化，发现Ⅱ型在排尿容量大于Ⅰ型的情况下，最大尿流率与平均流率却低于Ⅰ型，尿流时间明显延长，二者之间有显著差异(P＜0.01)。

5. 辨证分型与神经系统检查的关系，见表3。从表3可以看出，本组59例作了冰水试验，均为下运动神经元表现。不论中医辨证为Ⅰ型还是Ⅱ型对冰水感觉均减退甚至丧失。本组患者均有不同程度的植物神经及周围神经病

表3　辨证分型与神经系统检查关系(%)

中医辨证	例数	膀胱对4C°冰水感觉减退率	有关神经系统检查减退率				
			肛门反射	球海棉体肌试验	膝反射	踝反射	下肢浅感觉
Ⅰ型	43	100.0*	74.4	88.4	79.1	93.0	72.1
Ⅱ型	17	100.0	88.2	88.2	100.0	100.0	82.4

*测42例

变，如不明原因腹泻或腹泻与便秘交替、阳萎、月经不调及四肢麻木、肌肉抽痛等。故又作了有关的阴部神经及周围神经系统检查，发现大多数患者球海绵体肌试验、膝反射、踝反射均减退甚至消失。以中医辨证分型来分析，则Ⅱ型的神经系统减退率均高于Ⅰ型。

讨　论

一、糖尿病一般属"消渴"证，而膀胱病变则属"癃闭"范畴。黄羡明老师认为本病系消渴证所致癃闭，均属虚证，而且大都属于癃证。一般发生于消渴病气阴两虚和阴阳两虚阶段。其病之本为真阴亏损，日久阴损及阳，耗伤精气，精不化气导致小便传送无力。早期以肺肾气虚为主，消渴病往往由于上焦气失敷布，水液不得输布周身而下达膀胱，肾气不足，膀胱气化不利，而致小便传送乏力之癃闭轻症，日久命门火衰，不能温煦膀胱则气化失司，导致癃闭重症。故临床上分为真阴不足、肺肾气虚型(Ⅰ型)及真阴亏损、肾阳虚衰型(Ⅱ型)。经本组60例辨证分析，结合尿流动力学观察结果，Ⅰ型一般残余尿较少，排尿功能障碍程度较轻，故属早期膀胱病变阶段；而Ⅱ型残余尿较多，排尿功能障碍较重，一般属晚期膀胱病变[2]。故此二型是符合膀胱病变发展规律，可以作为本病的辨证依据。

二、尿流动力学是近年来新兴的一门学科，是检查下尿路功能障碍的特定指标，糖尿病性膀胱病变主要表现为排尿功能障碍，故为了更准确地反映糖尿病患者排尿功能障碍和作为针灸治疗前后的客观指标，我们自行设计利用四导生理记录仪上压力换能器进行膀胱测压、肌电图同步检查，结合尿流率测定和神经系统等检查以综合分析排尿功能障碍的程度。本组的发病率为9.04%，明显高于国内报道的1～3.3%[3,4]，这是由于我们对本病经过普查，又结合尿流动力学等项检查，较早地发现膀胱病变之故。

三、糖尿病性膀胱病变一般教科书上归入感觉麻痹型神经原性膀胱内。本组病例大多数表现为感觉麻痹型神经原性膀胱内压曲线，一般早期为低压膀胱，晚期为无张力膀胱，说明神经病变范围主要在脊髓反射弧的感觉支，但更值得注意的是本组还有4例膀胱内有大量残余尿，临床症状严重，病人表现为自主性神经原性膀胱的内压曲线，可能由于此类病人长期血糖较高，神经病变范围更广泛，不仅侵犯脊髓反射弧的感觉支和运动支，而且侵犯脊髓中枢，使膀胱脱离中枢神经的支配而形成一自律性器官所致。

四、通过中医辨证与尿流动力学各项指标关系的分析，初步可以得出结论：中医辨证为真阴不足、肺肾气虚型者，一般可以估计此患者的残余尿较少，大多＜100ml；膀胱内压图大多为较轻度感觉麻痹型神经原性膀胱图型；逼尿肌和括约肌功能已有不同程度的协同失调；膀胱感觉减退；尿流率检查异常，在排尿量接近正常的情况下，MVR大致在10ml/秒左右，VT延长；肾功能大多正常或接近正常，无肾积水表现。一般属于早期膀胱病变，病情较轻，如及时治疗，预后较佳。中医辨证为真阴亏损、肾阳虚衰型者，一般病情较重，估计此患者残余尿较多，大多＞100ml；膀胱内压呈现重度的感觉麻痹型或自主性神经原性膀胱图型；逼尿肌和括约肌功能严重协同失调；膀胱感觉大多消失；MVR大致在10ml/秒以下；肾功能较差，可能有肾积水。多属晚期膀胱病变，如不积极治疗，预后多不良。

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Discussion on Relation of Symptom-Sign Differentiation of Diabetogenous Bladder Dysfunction with Urine Dynamics

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The study of relation of symptom-sign differentiation of bladder dysfunction with urine dynamics in 60 cases of diabetes demonstrated that classfication based on symptom-sign differentiation conformed to the laws of the development of bladder dysfunction. The severity of urination disturbance could be evaluated by symptom-sign differentiation, which, as a good example to show the importance of symptom-sign differentiation, was of clinical significance for diagnosis, treatment and prognosis of diabetes.

Results suggested that the patients in the groups with deficiency of genuine Yin and insufficiency of energy of the lung and kidney were likely to have less residual urine, mostly < 100 ml, the intravesical pressure pattern usually showed slightly sense-paralyzed neurogenic bladder, the functions of musculi detrusor urine and sphincter showed various degrees of dyssynergia, the sensation of bladder diminished; the urine flow rate was abnormal; in case the amount of urination was close to the normal, MVR was generally about 10 ml/s, VT lengthened, nephric function was almost normal and there was no evidence of kidney hydrops. Nearly all cases were in the early stage with mild pathogenic changes, and their prognosis would be better if the disease was promptly treated. Patients with undermined genuine Yin depleted kidney-Yang were in more severe condition. They were expected to have more residual urine, mostly > 100 ml, intravesical pressure indicated the severely sense-paralyzed pattern or autonomic neurogenic pattern of the bladder. Their musculi detrusor urine and sphincter showed a more serious degree of dyssynergia. The sensation of the bladder mostly disappeared, MVR was usually below 10ml/s; the kidney function became poor, resulting in hydrops of this organ. Most of these cases were in advanced stage and their prognoses were poor unless the patients were actively treated. (Original article on page 732)

Clinical Analysis of 30 Cases of Glossy Tongue and Observation on the Exfoliated Cells from the Tongue by Imprints

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Clinical observation on 30 cases of glossy tongue was made chiefly in the following two ways: describing the gross picture of the tongue and differentiating syndromes, and studying on exfoliated cells of the tongue in a sequence of time by imprints.

The items including the pattern of distribution of cells, the cells from different layers and of various kinds, the proportions of various kinds of cells and the total number of cells, the degree of necrosis, and the background were compared with those of the normal tongue.

All the statistical data showed a remarkable distinction. Besides, a few physiological and biochemical test values were obtained. The relationship between the picture in imprints of the glossy tongue and the development of the disease was established to help predict the prognosis. Imprints as an innocuous method of detection for cytological changes in tongue makes the gross examination of tongue perfect.

Pathogenesis of the glossy tongue was discussed. It is believed that cell necrosis is the principal feature of the glossy tongue. Marked deficiency of nutritious matter renders the cells vulnerable to the invasion of biological agents and other factors, leading to cell necrosis. Massive degeneration, atrophy, necrosis and postnecrotic shedding of middle layer epithelial cells result in glossy tongue. It is consistent with the theory of traditional Chinese medicine that glossy tongue is due to exhaustion of Yin fluid. The cytology of the tongue throws some new light on and confirms the validity of the theory. The prerequisite for and process of regeneration of new coating on glossy tongue were also discussed. (Original article on page 735)

A Clinical and Experimental Study of Tongue Picture of Children with Deficiency or Excess Symptom-Complex

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This paper reports a study of the tongue pictures of children with deficiency or excess symptom-complex, and their relation with immune, digestive function by means of immune and digestive function tests.

Experiment items: determination of tongue surface pH value, serum gastrin level, xylose absorption rate, serum immune globulin protein, complement C_3 level and the value of peripheral blood T lymphocyte.

Results: in the cases with deficiency tongue feature, the immune and digestive function levels are lower, but those of the excess group are normal or elevated. From our experiment, we have got an inference that some digestive and immune function indexes may be used to differentiate the Gong (attacking) and Bu (tonifying, reinforcing) methods in TCM treatment. (Original article on page 738)