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绝经早晚对骨密度的影响

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内容提要　为了探讨绝经后骨质疏松症的中西医病因、病机及防治，本研究用 γ 线吸收法测量了 189 例绝经后肾虚证妇女的骨密度。结果表明：患有肾虚证妇女的骨密度明显低于无肾虚证同龄健康妇女($P<0.001$)；45 岁以前绝经妇女的骨密度低于 45 岁以后绝经妇女($P<0.05$)。这可能与卵巢功能早衰，雌激素提前降低有关。推测月经停止越早，其骨密度可能越低，肾虚证越明显；绝经越晚，其骨密度下降的幅度少，肾虚证候也不明显。

关键词　γ 线吸收法　骨密度　肾虚证　绝经后

根据中医肾主骨、主生长发育、主冲任二脉、主月经等理论，我们测量了 189 例绝经后肾虚妇女的骨密度，发现绝经早晚对骨密度影响较大，报告如下。

资料与方法

一、病例选择　按照中医虚证辨证参考标准[1]，拟定肾虚标准为：(1)腰背酸痛。(2)胫酸膝软或足跟痛。(3)耳鸣或耳聋。(4)发脱或齿摇。(5)尿后有余沥或失禁。(6)性功能减退、不育、不孕。(7)脉细弱或细数，舌淡胖或红瘦。本研究 189 例绝经后肾虚证妇女均具备上述标准中三项以上，其中 45 岁以前绝经者 47 例(包括 45 岁)，现在平均年龄 52.2 岁；45 岁以后绝经者 142 例(不包括 45 岁)，现在平均年龄 51.9 岁。健康妇女 540 例，无上述肾虚证候，月经正常。上述病例及健康妇女均除外急性内、外、妇科疾患，半年内均未使用激素类药物。

二、测量方法　采用中国测试技术研究院生产的 SPA-II 型骨矿分析仪，以 γ 线吸收法测量骨密度，允许误差 2%。测量部位是右桡骨的中下 1/3 交界处，将窄束 γ 线由尺、桡骨间向桡骨横越扫描，测量 1.0 cm 长骨矿含量，即骨线密度(用 BMC 表示，单位 g/cm)，再除以该部位骨横径(用 BW 表示)，为骨面密度(用 BMC/BM 表示，单位 g/cm^2)[2]。

结　果

测量结果说明，47 例 45 岁以前绝经的肾虚证妇女的骨密度比同地区同龄组健康妇女的骨密度低，两者有显著性差异($P<0.001$)。142 例 45 岁以后绝经的肾虚证妇女的骨密度比健康组妇女低，两者比较有显著性差异($P<0.001$)。47 例 45 岁以前绝经的妇女骨密度比 142 例 45 岁以后绝经的妇女低，两者比较差别有显著性意义($P<0.05$)，但两组病例的年龄无差异($P<0.05$)。

附表　189 例肾虚证妇女骨密度与健康妇女比较　($\bar{x}\pm S$)

组　别		BMC(g/cm)	BMC/BW(g/cm^2)
肾虚	≤ 45 岁	0.731±0.127*△	0.622±0.092*△
	>45 岁	0.749±0.128*△	0.638±0.110*
健康	≤ 45 岁	0.881±0.120*	0.740±0.080*
	>45 岁	0.814±0.150*	0.688±0.110*

注：肾虚组与健康组比较，*$P<0.001$；肾虚组内≤ 45 岁与>45 岁比较，△$P<0.05$

讨　论

大量文献报道[3]，性激素水平提前下降是引起妇女过早绝经和骨密度降低的主要原因。而性激素提前下降的原因可能是卵巢功能早衰的结果。性激素(雌激素)引起骨密度降低的机理是由于雌激素降低后骨对甲状旁腺素的敏感

性增加，破骨细胞的活性增强，骨吸收加快，血钙升高，后者使甲状旁腺素分泌减少，致使 $1,25\text{-}(OH)_2\text{-}V_3$ 活性降低，肠钙吸收减少，尿钙增加，发生骨密度降低。另外，雌激素有刺激降钙素分泌作用，降钙素下降又使破骨细胞活性增加而失骨。雌激素降低还能导致蛋白质合成不足，影响骨基质形成，致骨质疏松。

本研究表明，189 例肾虚证绝经后的妇女的骨密度比健康妇女低，与中医“肾主骨生髓”、“肾充则骨强，肾虚则骨衰”等理论一致，并与文献[4~6]报道的肾虚证其骨密度降低相符合，证实了中医上述理论的科学性。

肾除主骨生髓外，还与冲任二脉密切相关，即肾气旺盛、冲任二脉气血充足，则月经正常；若肾精虚损、血海空虚、冲任不足，则出现闭经。我们对 47 例 45 岁以前绝经的肾虚证妇女骨密度测量，发现不仅 BMC、BMC/BW 明显低于健康妇女，而且还低于 142 例 45 岁以后绝经的肾虚证的妇女。说明绝经越早，其骨密度下降也早且幅度大，肾虚证候越明显；绝经越晚，则骨密度下降较晚且幅度较小，可能肾虚证候越不明显。

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VE 能与多价不饱和脂肪酸竞争性与烷过氧基(LOO·)结合而终止链式反应[7]。本文结果表明慢性肾炎患者血清 VE 含量低于对照组，血清 LPO 水平与 VE 含量呈负相关。提示 VE 含量减少，打破了氧化与抗氧化之动态平衡，不能有效地阻断脂质过氧化链式反应，导致脂质过氧化反应升高。VE 含量减少可能是患者血清 LPO 水平升高的原因之一。

保元汤中红参含有麦芽醇，可与体内自由基结合，抑制脂质过氧化反应[8]，红参还具有清除羟自由基的作用[9]；肉桂具有较强的抑制丙二醛生成的作用[10]。经保元汤治疗后血清 LPO 含量明显低于治疗前，且与正常无差异，表明该方有抗脂质过氧化作用。保元汤治疗后患者血清 VE 升高 1.06 μg/ml，但无统计学差异，其机理有待进一步研究。本文观察对象均为脾肾两虚患者，故采用扶正固本，健脾补肾之法。服保元汤 30 d 后，患者 Scr、u-pro 下降，Sp、Hb 升高，且 Sp 与 u-pro 呈负相关，表明从尿液丢失蛋白多，则血浆蛋白降低，减少尿蛋白丢失，即可升高 Sp，从而消除水肿，改善症状。本文结果提示患者血清 LPO 水平升高可能是脾肾两虚证的内涵之一，通过培补脾肾则可降低血清 LPO 水平。临床总有效率达 83.3%，表明该方有较好的临床应用意义。

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Effect of Fushen Decoction (复肾汤) on Thyroid Hormone in Chronic Glomerulo-nephritis of Both Spleen and Kidney-Yang Deficiency Patients

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Changes of thyroid hormone level before and after treatment in 45 patients with chronic glomerulo-nephritis were observed. Of which, 23 cases were treated with Fushen Decoction and the other with Shenyan Siwei tablet (肾炎四味片) as control. The results showed: (1) The level of serum T_3 and T_4 of 45 patients were significantly reduced ($P<0.001-0.01$). (2) The level of serum T_3 and T_4 were significantly negative correlated with the value of BUN and Scr and the score of both Spleen and Kidney-Yang Deficiency Syndrome ($P<0.01-0.05$), but there existed no significant negative correla tion with urinary protein excretion in 24 hours ($P>0.05$). (3)After treatment with Fushen Decoction, the level of serum T_3 and T_4 significantly increased ($P<0.01-0.05$), but no significant change was recorded in control group ($P>0.05$). (4) Although the level of serum T_3 and T_4 were raised, they were still lower than those of normal people.

Key words Fushen Decoction, chronic glomerulo-nephritis, both Spleen and Kidney-Yang Deficiency Syndrome, thyroid hormone

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Effect of Baoyuantang (保元汤) on Level of Serum Lipid Peroxide and Vitamin E in Chronic Glomerulonephritis

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Serum lipid peroxide (LPO) and vitamin E (VE) were determined in 18 patients with chronic glomerulonephritis (CGN) before and after treatment with Baoyuantang (BYT). It was found that before treatment the level of serum LPO (4.89 ± 1.85 μmol/L) was higher, while the content of serum VE (4.27 ± 1.84μg/ml)was lower than those of normal controls (3.36 ± 0.59μmol/L, $P<0.001$; 7.03 ± 0.69μg/ml, $P<0.05$). After treatment with BYT, the level of LPO lowered to 3.76 ± 1.49μmol/L, $P<0.05$, as compared with the value before treatment, while the content of VE was increased to 5.33 ± 2.45μg/ml, but without statistical significance. A negative correlation was found between LPO level and VE content both before and after treatment ($r=-0.495, P<0.05$; $r=-0.522, P<0.05$). The results indicated chronic deficiency of VE in association with an increase in the level of LPO in the kidney in CGN patients and inhibition of LPO by BYT. After treatment complete remission was observed in 5 cases, basic remission in 3, and partial remission in 7.

Key words Baoyuantang, chronic glomerulonephritis, Insufficiency of both the Spleen and Kidney, lipid peroxide, vitamin E

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The Effect of Menopausal Time on Osteal Density

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Osteal density of 189 Kidney Deficiency (KD) women displayed after menopause as determined by the method of γ-ray absorption. The result showed that the osteal density of the KD women was significantly lower than those women of same ages without KD ($P<0.001$) and the osteal density of the women whose menopause occurred before the age of 45 was lower than that after 45 ($P<0.05$). This suggested that the prematurity of ovarial function and the decrease of estrogen ahead of time might be the cause. Therefore, the earlier the menopause, the lower the osteal density, as well as the more serious the KD well be.

Key words γ-ray absorption, osteal density, Kidney Deficiency after menopause

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