·临床研究·

强直性脊柱炎的骨密度探讨

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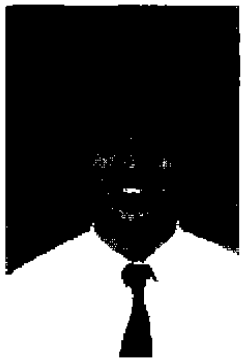

摘要 **目的** 对与HLA-B27相关的脊椎及关节的免疫性、炎症性病变所伴有的骨质密度与骨矿含量变化进行研究，发现其骨量变化的规律。**方法** 用双能量骨密度仪(DEXA)测定16例确诊为强直性脊柱炎患者与20例正常对照组病例作比较。**结果** 早期强直性脊柱炎患者的脊椎及股骨近端骨密度值已有明显降低，晚期病例股骨颈骨密度仍低于对照组，但因晚期病例椎体周围软组织的骨化、矿化，使腰椎骨密度值反而增高。**结论** ①强直性脊柱炎本身从早期开始即伴有骨量丢失，在治疗强直性脊柱炎同时应防止骨量丢失及畸形出现。②晚期患者因脊柱周围软组织骨化，使DEXA测量方法不能真实反映椎体骨量丢失，采用QCT方法更为可取。

关键词 强直性脊柱炎 骨密度

Investigation of bone mineral density in patients with ankylosing spondylitis

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Abstract **Objective** To investigate the relationship between bone mass and an inflammatory and immunological disease of spine and joint associated with positive reaction of HLA-B27. **Methods** BMD was measured by the dual energy X-ray absorptiometry (DEXA) of 16 patients with definite diagnosis of ankylosing spondylitis, and was compared with that of 20 normal controls. **Results** The patients in early stage lost the bone mass already, and had lower volume of BMD in both hip and spines than that of controls. But in the later stage the BMD of spines in the patients was higher than that of the control group, even the BMD of femoral neck was still lower than that of normal subjects. Such condition was caused by the calcification and mineralization of the surrounding tissues of the spine in the later stage. **Conclusion** Ankylosing spondylitis is accompanied with loss of bone mass in its early stage. Prevention of bone loss and deformity is necessary in the same time of treatment. QCT is suitable for measurement of bone mass in later stage, while DEXA cannot reflect the true cause of the calcification and mineralization of the surrounding tissues of the spines in the later stage.

Key words Ankylosing spondylitis Bone mineral density

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作者简介：王英民，男，34岁，1966年1月1日出生于北京，就读于北京医科大学医疗系，本科学业结束后分配至卫生部北京医院骨科工作，历任住院医师、主治医师，曾在美国斯坦福大学进修，现在哈福大学从事研究工作

强直性脊柱炎是一种以男性为主的与HLA-B27相关的炎症性的脊柱及关节病变，主要累及骶髂关节、脊柱及髋关节，早期表现为滑膜炎及韧带附着点的病变，晚期由于软骨内骨化造成骨性强直。其病因至今尚不十分清楚。强

直性脊柱炎晚期出现"驼背"畸形，X线可见椎体骨小梁减少，椎体发生楔形变。Hanson[1]等人认为疾病晚期由于骨质疏松，导致了"驼背"畸形，Will[2]等人认为骨质疏松在本病的早期即可出现，国内目前对强直性脊柱炎导致的继发性骨质疏松尚未进行深入探讨。用X线摄片估计骨质疏松是一种比较粗糙的方法，DEXA骨密度测量法是目前比较可靠和精确的方法之一，它具有较高的精确度和正确率，扫描时间短，放射剂量小等优点。本文通过用DEXA对患者骨密度的测定初步探讨了强直性脊柱炎患者脊柱及髋关节的骨密度值及其与病程的关系。

1 材料和方法

选择具有典型临床表现，经血清HLA-B27试验均为阳性，X线已证实具有骶髂关节病变，椎小关节病变或伴有周围韧带骨化等病理表现，已确诊为强直性脊柱炎病人16例，均为男性，年龄15～77岁，平均年龄34岁。此16例病人均不伴有严重肝肾疾患及各种代谢性疾病。仅用过非甾体类抗炎药物治疗，无激素及放射治疗史。根据X线表现将病人分为两组：X线仅有骶髂关节及椎小关节病变无明显韧带骨化者为早期，共13例，年龄15～59岁，平均29岁。伴有韧带骨化，竹节样改变者3例，年龄29～77岁，平均56岁。另选取对照组正常人20例，年龄20～39岁，平均年龄28岁。用LUNAR公司的双能量X线骨密度测定仪(DEXA)分别测定病例组及对照组的腰椎与髋关节的骨密度值，用统计学方法对测定值进行比较得出结论。

2 结果

将病例测定值与对照组测定值相比较用t检验方法得出结论：早期病例组腰椎BMD与股骨颈BMD比正常组明显降低($P<0.05$)，晚期病例组腰椎BMD和正常组相比无明显差异($P>0.05$)，股骨颈BMD病变组比正常组仍明显降低($P<0.05$)，见附表。

附表 病例组的BMD测定值与正常值的比较($\bar{x}\pm s$)

部位	对照组 ($n=20$)	早期 ($n=13$)	晚期 ($n=3$)
腰椎	1.12±0.11	1.03±0.13**	1.23±0.13*
股骨颈	0.99±0.11	0.89±0.13**	0.74±0.13**

注：与对照组比：* $P>0.05$；** $P<0.05$

3 讨论

3.1 强直性脊柱炎与继发性骨质疏松：强直性脊柱炎存在继发性骨质疏松征象，很久以来从X线摄片检查即已明确。此种骨质疏松被认为是继发于脊柱强直，可能与长期制动，废用性骨萎缩所致。但本组早期的强直性脊柱炎患者尚无韧带骨化及脊柱强直，脊柱仍有相当的活动范围，对早期患者的椎体及髋关节骨密度测定显示已经存在广泛的骨质疏松表现，由此说明强直性脊柱炎继发的骨质疏松是该病变本身病理变化的一个方面，并非单纯因强直后制动造成。Mullaji[3]等认为可能与炎症及细胞毒素有关，其机制还有待进一步深入探讨。晚期的强直性脊柱炎，虽然周围的韧带钙化、骨化，新生骨形成，但由病变本身造成的椎体骨小梁数量减少，骨质萎缩仍在继续进展，以至造成病变晚期的椎体楔形变和"驼背"畸形。明确上述病理变化特点，对今后强直性脊柱炎的早期诊断提供了新的依据和方法。在治疗方面不仅应治疗强直性脊柱炎本身，还应防止骨量丢失及畸形出现。

3.2 临床常用的X线摄片评定骨质疏松方法，敏感性很低。Pun and Wong[4]报道大约骨量丢失达到50%，X线片上方可显示出明显的骨质疏松。DEXA测量枢轴骨(脊柱及髋关节)骨量不失为一种敏感性高、正确性和精确度均较高的方法，是目前骨量测定的主要手段之一。对强直性脊柱炎早期患者的骨量测定结果显示无论脊椎及髋部均显示骨量的减少，晚期患者测定结果显示髋部骨量仍低于正常水平。而脊椎BMD则反而高于正常骨密度值，原因是晚

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期椎体周围的韧带骨化，致密的新生骨形成的外壳，提高了局部矿化软组织的骨密度值，从而掩盖了椎体内骨小梁萎缩所致的严重骨质疏松的存在。因此 DEXA 对晚期病例脊柱 BMD 的测定并不能真实反映出椎体松质骨的骨量丢失状况。Devogelaer[5]用 QCT 方法测定晚期病例椎体内松质骨骨量已证实骨质疏松的存在。因此 QCT 对晚期强直性脊柱炎椎体骨量测定是更为正确和可取的方法。

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中国老年学会骨质疏松委员会2000年10月中旬在江苏无锡市召开第七届全国骨质疏松年会和第四届钙剂年会