

# 复方无名异冲剂对老年大白鼠

## 股骨抗弯力影响的实验研究

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**摘要** 采用 12 月龄老年大白鼠 32 只,随机分为四组,每组 8 只,用药组喂服无名异冲剂拌混饲料,对照组喂服一般饲料。18 月龄时处死,检测股骨中段弯曲破坏载荷及股骨皮质厚度。结果显示:雄性、雌性大白鼠用药组弯曲破坏载荷,平均骨皮质厚度明显高于对照组( $P < 0.05 \sim 0.01$ );用药组、对照组雄性大白鼠弯曲破坏载荷明显高于雌性大白鼠( $P < 0.01$ )。表明:无名异冲剂具有预防和延缓骨质疏松的发生和发展作用;相同月龄中,雌性大白鼠骨质丧失相对地较雄性大白鼠明显。

**关键词** 骨质疏松症 无名异冲剂 生物力学

我院骨伤专家许书亮教授研制成无名异冲剂,试用于老年骨质疏松症,效果良好。本文通过实验探讨无名异冲剂对老年大白鼠股骨抗弯能力的影响。

### 材料和仪器

无名异冲剂:由无名异、麦饭石、淫羊藿、黄芪、当归、川续断、骨碎补、补骨脂、陈皮等自制而成,每包 15 克。

仪器:0.02mm 千分卡,福州量具厂。EGK-1 型测力仪,长春试验厂。LeitE 1512 型切片机,西德产。Olympus 显微镜,日本产。

动物:12 月龄的老年大白鼠 32 只,福建中医学院动物房提供。

### 方 法

32 只大白鼠随机分为四组,即雄性用药组,雄性对照组,雌性用药组,雌性对照组,每组 8 只,分笼饲养于室温为 20~30° 的同一室内。雄性和雌性用药组用无名异冲剂拌混饲料,制成药饼喂养,无名异冲剂的日剂量相当于成人每公斤体重的 5 倍。每日喂 1 次,待药饼吃完后再供以一般饲料,每周连续服药 5 天,间歇 2 天;对照组喂以一般饲料。四组动物均饲养至 18 月龄时全部处死。分别切取每只大鼠的两侧股骨,并以钝性剥离除去所有的软组织,之后用 EGK-1 型测力仪测定股骨中段的弯曲强度。做完大白鼠股骨中段抗弯力试验

后,把标本浸于 10% 甲醛溶液中固定,然后用 8% 乙二胺乙酸二钠进行脱钙后用磷酸缓冲液冲洗。U—illanueva 染色 72 小时,乙醇脱水后用甲基丙烯酸甲酯单体配制的包埋剂包埋,制成 5 $\mu$ m 的骨切片,再用 0.5% 甲苯胺蓝染色。在 Olympus 显微镜下用目镜测微尺测量皮质厚度。

### 结 果

#### 1. 大鼠股骨弯曲破坏载荷:

表 1 显示,雄性雌性大鼠,用药组的弯曲破坏载荷明显高于对照组( $P < 0.01$  和  $P < 0.05$ ) 在用药组和对照组中,雄性大白鼠股骨弯曲破坏载荷明显高于雌性大白鼠( $P < 0.01$ )。

表 1 四组大鼠股骨弯曲破坏载荷( $\bar{X} \pm S$ ) N · mm

	雄性组	雌性组	P
用药组	317.21 $\pm$ 13.32	246.92 $\pm$ 9.46	<0.01
对照组	263.51 $\pm$ 9.76	209.78 $\pm$ 7.43	<0.01
P	<0.01	<0.05	

#### 2. 大鼠股骨皮质厚度

表 2 显示,雄性和雌性治疗组的平均骨皮质厚度显著高于对照组( $P < 0.05$ ),雄性和雌性治疗组的平均骨皮质厚度相比,两者无显著差别( $P > 0.05$ )。对照组中雄性和雌性的平均骨皮质厚度无明显差别( $P > 0.05$ )。

表2 四组大鼠股骨皮质厚度( $\bar{X} \pm S$ )  $\mu\text{m}$ 

	雄性组	雌性组	P
用药组	1.001 $\pm$ 0.121	0.892 $\pm$ 0.117	>0.05
对照组	0.764 $\pm$ 0.089	0.613 $\pm$ 0.098	>0.05
P	<0.05	<0.05	

## 讨 论

无名异冲剂是以补肾中药为主,防治老年骨质疏松症的新型制剂。据现代研究,补肾中药提高了机体内分泌腺系统的功能,改善了下丘脑——垂体——性激素轴的功能,增加了体内的性激素,调整了内环境,从而达到抑制骨吸收,增加骨形成,起到延缓骨质疏松的发生和发展作用。方中无名异活血化瘀,消肿止痛,麦饭石壮骨强筋、活血化瘀<sup>(1)</sup>(具有改善局部血循环,增加氧张力作用<sup>(2)</sup>),淫羊藿补肾助阳(具有诱导成骨细胞活性,间接地促进骨骼的正常代谢活动<sup>(3)</sup>),三者用为主药。加上补肾益气,活血填髓之补骨脂、黄芪、当归、川断、骨碎补、陈皮等中药,共奏补肾益气、壮骨填髓、活血止痛之功效。

实验表明,用药组大白鼠股骨中段抗弯能力显著高于对照组( $P < 0.05 \sim 0.01$ ),表明无名异冲剂能有效地延缓骨质的丧失,减慢骨质疏松的发展,相对地提高骨的抗弯能力。同样,骨皮质厚度在一定程度上反映骨量多少<sup>(3)</sup>,治

疗组老年大白鼠股骨中段骨皮质厚度高于对照组( $P < 0.05$ ),说明无名异冲剂可能抑制了骨的吸收和增强了骨的生成,延缓了骨质的丧失,相对地保持了单位体积内的骨组织,有效地提高了大白鼠股骨的骨皮质厚度。因此,在相同条件下,证实了无名异冲剂治疗组的老年大白鼠股骨中段的骨皮质厚度和它的弯曲破坏载荷,即抵抗外力的能力优于对照组。

结果还表明,治疗组和对照组的雄性大白鼠股骨中段抗弯能力明显高于雌性大白鼠的治疗组和对照组( $P < 0.01$ ),这表明在相同的月龄中,雌性大白鼠骨质丧失相对地较雄性大白鼠明显,这与临床上常见的同年龄组中老年女性骨质疏松的发生率高于男性是相符的,这可能与体内性激素水平,成骨细胞的功能,骨骼中钙—磷贮存等因素有关<sup>(3)</sup>。

综上所述,无名异冲剂具有良好的预防和延缓骨质疏松的发生和发展作用。然而,以大白鼠股骨的抗弯能力和骨皮质厚度为指标,仅表明了延缓骨质疏松进展的结果,而对于已经有骨质疏松的治疗,还需进一步研究。

## 参考文献

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## 双侧腓肠肌结核一例

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××,女,25岁。因双小腿疼痛并肿物3月以双小腿肌纤维瘤收入院

体格检查:双小腿后侧中部分别触及一约6×5cm、4×5cm大小肿物,质韧,活动度可,轻压痛。与皮肤无粘连,与基底部粘连,界限不清楚。双小腿正侧位片:胫腓骨无异常。

手术所见:肿瘤位于双侧腓肠肌之内,无包膜,与肌肉界限不清。彻底分离后切除。切开标本:切面呈苍

白色,侵入肌肉,无干酪样坏死组织。病理诊断:双侧腓肠肌结核。

## 讨 论

继发于骨、关节病变的肌肉结核是常见的,而血源性结核极为少见,文献报道较少。本病例骨、关节发现结核病灶,为血源性感染所致。由于本病极为少见,诊断常很困难,有赖于肿块穿刺或活体检查。治疗以手术切除为主。

## Abstract of Original Articles

### Experimental study on Gu Bao Wan in treating rachitis

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In this article, changes of serum calcium, phosphorus, alkaline phosphatase, 25-hydroxy-vitamin D<sub>3</sub>, bone tissue morphology and bone metrology were observed in treating rachitic rats with Chinese medicine Gu Bao Wan pre- and post-treatment and they were compared with Vitamin D<sub>3</sub>. The results indicated that Gu Bao Wan is effective in the prevention and treatment of rachitis, especially it has prominent effects in the elevation of serum calcium, phosphorus, and decreasing of serum alkaline phosphatase and in the promotion of mineralization of osteoid. But it is different from the mechanism of Vitamin D<sub>3</sub>.

**Key Words** Rachitis Gu Bao Wan Prevention and treatment

(Original article on page 5)

### Laboratory study of rotatory manipulation in the treatment of lumbar intervertebral disc protrusion

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The stress changes on posterior lateral edges of  $L_{4-5}$ ,  $L_5 - S_1$  discs and the positional alternates of articular processes of lumbar facet joints were measured while mimicing rotatory manipulations were performed on three spinal specimens from fresh cadavers. The study showed that rotatory manipulation with anterior and lateral flexion allowed a greater range of motion between articular processes of lumbar facet joints than straight rotatory manipulation. There was a sliding movement between articular processes while the spine was rotated. The interarticular space of the right facet joint was increased when the spine rotated to the left and vice versa. The sliding movement between the articular processes can adjust the position of lumbar vertebra. The pressure was increased at the left posterior lateral site of the disc and was decreased at the right posterior lateral site of the disc while the spinal specimen was rotated during flexion to the left, and vice versa. Negative pressure would be changed to positive at the end stage of rotatory manipulation. Such kind of repeated changes of pressure will change the position and shape of the protruded nucleus, and modification of the pressure on the nerve root would be happened.

**Key Words** Lumbar intervertebral disc protrusion Manipulation therapy Biomchanics

(Original article on page 7)

**Experimental study on the influence of anti-bending force of the femur of senile rats with Fu Fang Wu Ming Yi Chong Ji**

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Thirty-two twelve months old senile rats were divided randomly into four groups with eight in each group. Subjects in the experimental group were feeded with food and Fu Fang Wu Ming Yi Chong Ji (pyrolusite diluent, Chong Ji). The subjects in control group were feeded with food only. All of them were sacrificed at 18-month old. Bending destroyed load and thickness of femoral cortex were measured. The results indicated that the bending destroyed load of both sex of the rats and average cortex thickness were prominently higher than the control group ( $p < 0.05 - 0.01$ ). In both experimental and control group, the bending destroyed load of male rats was prominently higher than that of female ones ( $p < 0.01$ ). This indicates that Chong Ji bears the action of prevention and delaying onset and developing of osteoporosis. In the same age group, bone loss of female rats are relatively evidently than that of male ones.

**Key Words** Osteoporosis Wu Ming Yi Chong Ji Biomechanics

(Original article on page 10)

**Integration of traditional Chinese and modern medicine and intramedullary treatment of fracture of femoral shaft**

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Three hundred and sixty five cases of fracture of femoral shaft were treated with integration of traditional Chinese and modern medicine. A comparative analysis and exploration of these two methods were carried on in order to better application in the treatment of fracture of femoral shaft.

**Key Words** Fracture of femoral shaft Traditional Chinese medicinal therapy

Fixation of fracture, intramedullary

(Original article on page 12)

**Enhanced clamp fixator in the treatment of fracture of olecranon**

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Two hundred and ten cases of fracture of olecranon were treated with enhanced clamp fixator. There were a rate of anatomical or near anatomical reduction of 97.6% after a follow-up period from three months to eight years. It is realized that the instrument can be used in any type of fracture of olecranon, the key point is to select suitable fixating point based on different types of fracture.

**Key Words** Fracture of olecranon Enhanced clamp fixator Fracture fixator

(Original article on page 21)