THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

CMBD
CENTER FOR METABOLIC BONE DISEASE

DIRECTOR'S NOTES

The UAB initiative in bone research was formalized 4½ years ago with the formation of the UAB Center for Metabolic Bone Disease (CMBD). The mission of this Center is establishment of infrastructure and provision of resources that support, catalyze and integrate basic research, clinical and outcomes/health services research, clinical activities and patient and physician education. The CMBD is truly an interdisciplinary center working closely with multiple schools and departments to achieve the above stated mission. Membership in the CMBD has grown from 51 members in six schools to currently 72 members in eight schools. Overall grant support from these 72 members is $36,260,611 of which $16,895,808 is bone-related. The Center continues to accept new members who can contribute to the achievement of this mission. For membership information please contact me at the address below.

The monthly UAB CMBD Journal Club sessions are centered around a theme encouraging both the clinical and basic science articles to be topically related. The journal club meets on the first Thursday of each month from 4:30-5:30 p.m. in the West Pavilion Conference Center and is open to all interested parties. Contact Dr. Kenneth Saag, Director of the Journal Club, at 205-934-0893 or email him at kssag@uab.edu for more information.

The Alabama Department of Public Health (ADPH) continues to foster care and education programs in osteoporosis, such as the Alabama Osteoporosis Task Force. This committee will meet on October 31 and develop proposed plans for group activities for Year 2001.

The School of Dentistry is an outstanding and important contributor to the comprehensive CMBD mission. Highlighted below is a synopsis of a program entitled "From Benchtop to Clinic: Bringing New Science to Better Patient Care", directed by Marjorie K. Jeffcoat, D.M.D., Professor and Chair, Department of Periodontics

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FROM BENCHTOP TO CLINIC: BRINGING NEW SCIENCE TO BETTER PATIENT CARE.

Our research group in the Department of Periodontics at the School of Dentistry in collaboration with the Divisions of Preventive Medicine and Rheumatology in the School of Medicine has been studying the relationships between bone biology, systemic bone loss, oral bone loss, and its treatment. Our laboratory has developed methods, using intraoral radiographs similar to the type of radiographs taken by your dentist, capable of measuring bone mineral density. Validation experiments have shown a significant correlation between bone density as measured using the radiographic method and standards of known density (r^2=0.96,$p<0.01$). The potential relationship between oral bone loss and systemic osteoporosis was examined in 457 postmenopausal women who are participating in a U.S. National Study of Women's Health (Women's Health Initiative). Specialized digital imaging software was used to assess alveolar bone loss, and crestal and basal bone density. Dual energy xray absorptiometry (DXA) was used to measure systemic bone density at the hip. General (multivariate) linear models of basal bone mineral density (of the mandible), hipbone mineral density, age, race, hormone replacement therapy and calcium supplements were created. At baseline a significant correlation between basal and hipbone density was observed ($r=0.78$, $p<0.001$).

These results led to the hypothesis that drugs used to decrease osteoclastic activity in osteoporosis may decrease the risk of alveolar bone loss. A separate double-blind randomized placebo-controlled pilot study was conducted in 40 patients with periodontitis. All patients received scaling and root planing and randomly were assigned to receive either placebo or alendronate for a six month dosing period. Alveolar bone loss was measured using digital subtraction radiography for the six month dosing period and an additional three-month post-dosing period. At 9 months the relative risk of progressive loss of bone height and density was 0.45 for the alendronate-treated patients compared with placebo treated patients ($p<0.05$).

These data indicate that epidemiologic and basic research may lead to clinical studies to slow bone loss in periodontal disease.

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