News & Notes

The content for the News & Notes section of *Myeloma Today* is drawn from a long list of publications based on inquiries received by the IMF Hotline and the interests expressed by our readers. To submit your inquiries or suggestions, please email MKazakova@myeloma.org.

Obesity and risk of MGUS

Obesity has been associated with an increased risk of multiple myeloma among African-Americans, although it is not known whether this increased risk is related to socio-economic status, genetic susceptibility, or both. The association of obesity with monoclonal gammopathy of undetermined significance (MGUS) is unknown. Doctors at the Mayo Clinic investigated a potential association between obesity and race and MGUS by screening 1,000 African-American and 996 Caucasian women between the ages of 40 and 79 years, of similar socio-economic status. A total of 39 (3.9%) African-American women and 21 (2.1%) Caucasian women had MGUS. Obesity, African-American race, and increasing age were independently associated, on multivariate analysis, with an excess risk of MGUS. The findings support the hypothesis that obesity is linked to the development of MGUS. The 2-fold excess of MGUS among African-Americans compared to Caucasians of similar socio-economic status supports the investigators' hypothesis for susceptibility genes in MGUS.

MGUS and risk of skeletal fractures

A group of researchers from Sweden and the United States conducted a study of the risk of skeletal fractures for patients with monoclonal gammopathy of undetermined significance (MGUS). Using population-based data from Sweden, the investigators assessed the risks of fractures in 5,326 MGUS patients diagnosed between 1958 and 2006, and compared these patients to matched controls. It was found that individuals with MGUS had an increased risk of fracture at five and 10 years. The risk was significantly higher for skull, vertebra, pelvis, sternum, and rib fractures when compared to fractures of arms and legs. Risk for fractures did not differ by M-protein concentration at diagnosis. MGUS patients with fractures had no excess risk of progressing to multiple myeloma or Waldenström's macroglobulinemia when compared to individuals in the control group.

Myeloma-associated chromosomal abnormalities

Researchers in the United Kingdom, including IMF Scientific Advisors Gareth Morgan and Faith Davies, are studying myeloma-associated chromosomal copy number abnormalities and their prognostic value. To obtain a comprehensive genomic profile of presenting myeloma cases, the investigators performed high-resolution single nucleotide polymorphism (SNP) mapping array analysis and examined deoxyribonucleic acid (DNA) alterations in order to define the regions in

which relevant genes of interest can be found. It was discovered that the most frequent chromosomal deletions relevant to myeloma are located at 1p (30%), 6q (33%), 8p (25%), 12p (15%), 13q (59%), 14q (39%), 16q (35%), 17p (7%), 20 (12%), and 22 (18%). In addition, based on data from fluorescent in situ hybridization (FISH) and other analyses, genes of prognostic importance were found to be located at 1p, 1q, and 17p. The researchers also identified deleted genes that have functions relevant to myeloma biology.

Arterial thrombosis in young myeloma patients

The results of a prospective cohort study by researchers in the Netherlands show a high incidence of arterial thrombosis in young patients treated for myeloma. This study evaluated the risk of arterial thrombosis in 195 newly diagnosed patients, aged 18 to 65 years. All patients were treated with thee cycles of VAD (vincristine, doxorubicin, dexamethasone) or TAD (thalidomide, doxorubicin, dexamethasone) or PAD (bortezomib, doxorubicin, dexamethasone) followed by high-dose melphalan and autologous stem cell transplantation (ASCT). During a total of 522 patient-years, 11 of the 195 patients (5.6%) developed arterial thrombosis. The highest incidence was seen during induction chemotherapy prior to ASCT. Hypertension and smoking were significantly associated with contributing to the risk of arterial thrombosis. The researchers concluded that myeloma patients have an increased risk for arterial thrombotic events during and after induction chemotherapy.