Medicine Abstracts

Annals of Internal Medicine

T. S. Huddle and R. M. Centor, **Retainer Medicine: An Ethically Legitimate Form of Practice That Can Improve Primary Care,** *Ann Intern Med* 155.9 (November 1, 2011): 633–635 • Retainer medicine has become an important yet controversial form of primary care practice in the United States, coming under attack for its purported failure to measure up to professional ethics. Critics opine that retainer medicine obstructs professional commitments to health care access and social justice. Some ethicists urge that society should restrict or ban retainer medicine; professional organizations have yet to take a stand. The authors believe that retainer medicine is compatible with professional ethics and will more likely aid in solving the difficulties facing primary care rather than add to them. Although professional ethics should evolve to address new conditions, a condemnation of retainer medicine is warranted neither by traditional ethical precepts nor by contemporary developments in medical ethics. Any move to sanction retainer medicine under the banner of professionalism or professional ethics will be counterproductive. The primary care shortage will only get worse if physicians in retainer practice leave primary care altogether, a likely outcome of legal or professional condemnation of retainer practice.

Archives of Internal Medicine

J. Mursu et al., **Dietary Supplements and Mortality Rate in Older Women: The Iowa Women's Health Study,** *Arch Intern Med* 171.18 (October 10, 2011): 1625–1633 • *Background*: Although dietary supplements are commonly taken to prevent chronic disease, the long-term health consequences of many compounds are unknown. *Methods*: We assessed the use of vitamin and mineral supplements in relation to total mortality in 38,772 older women in the Iowa Women's Health Study; mean age was 61.6 years at baseline in 1986. Supplement use was self-reported in 1986, 1997, and 2004. Through December 31, 2008, a total of 15,594 deaths (40.2%) were identified through the State Health Registry of Iowa and the National Death Index. *Results*: In multivariable adjusted proportional hazards regression models, the use of multivitamins (hazard ratio, 1.06; 95% CI, 1.02–1.10; absolute risk increase, 2.4%), vitamin B(6) (1.10; 1.01–1.21; 4.1%), folic acid (1.15; 1.00–1.32; 5.9%), iron (1.10; 1.03–1.17; 3.9%), magnesium (1.08; 1.01–1.15; 3.6%), zinc (1.08; 1.01–1.15; 3.0%), and copper (1.45; 1.20–1.75; 18.0%) were associated with increased risk of total mortality when compared with corresponding nonuse. Use of calcium was inversely related (hazard ratio, 0.91; 95% confidence interval, 0.88–0.94; absolute risk reduction, 3.8%). Findings for iron and calcium were replicated in separate, shorter-term analyses (10-year, 6-year, and 4-year follow-up), each with approximately 15% of the original participants having died, starting in 1986, 1997, and 2004. *Conclusions*: In older women, several commonly used dietary vitamin and mineral supplements may be associated with increased total mortality risk; this association is strongest with supplemental iron. In contrast to the findings of many studies, calcium is associated with decreased risk.

B.E. Sirovich et al., **Too Little? Too Much? Primary Care Physicians' Views on US Health Care: A Brief Report,** *Arch Intern Med* 171.17 (September 26, 2011): 1582–1585 • *Background*: Some believe that a substantial amount of US health care is unnecessary, suggesting that it would be possible to control costs without rationing effective services. The views of primary

care physicians—the frontline of health care delivery—are not known. *Methods*: Between June and December 2009, we conducted a nationally representative mail survey of US primary care physicians (general internal medicine and family practice) randomly selected from the American Medical Association Physician Masterfile (response rate, 70%; n = 627). *Results*: Forty-two percent of US primary care physicians believe that patients in their own practice are receiving too much care; only 6% said they were receiving too little. The most important factors physicians identified as leading them to practice more aggressively were malpractice concerns (76%), clinical performance measures (52%), and inadequate time to spend with patients (40%). Physicians also believe that financial incentives encourage aggressive practice: 62% said diagnostic testing would be reduced if it did not generate revenue for medical subspecialists (39% for primary care physicians). Almost all physicians (95%) believe that physicians vary in what they would do for identical patients; 76% are interested in learning how aggressive or conservative their own practice style is compared with that of other physicians in their community. *Conclusions*: Many US primary care physicians believe that their own patients are receiving too much medical care. Malpractice reform, realignment of financial incentives, and more time with patients could remove pressure on physicians to do more than they feel is needed. Physicians are interested in feedback on their practice style, suggesting they may be receptive to change.

BMJ

P. Grenfell et al., **Views and Experiences of Men Who Have Sex with Men on the Ban on Blood Donation: A Cross Sectional Survey with Qualitative Interviews,** *BMJ* 343 (September 7, 2011), doi: 10.1136/bmj .d5604 • *Objective*: To explore compliance with the UK blood services' criterion that excludes men who have had penetrative sex with a man from donating blood, and to assess the possible effects of revising this policy. *Design*: A random location, cross sectional survey followed by qualitative interviews. *Setting*: Britain. *Participants*: 1,028 of 32,373 men in the general population reporting any male sexual contact completed the survey. Additional questions were asked of a general population sample (n = 3,914). Thirty men who had had penetrative sex with a man participated in the qualitative interviews (19 who had complied with the blood services' exclusion criterion and 11 who had not complied). *Main Outcome Measure*: Compliance with the blood services' lifetime exclusion criterion for men who have had penetrative sex with a man. *Results*: 10.6% of men with experience of penetrative sex with a man reported having donated blood in Britain while ineligible under the exclusion criterion, and 2.5% had donated in the previous 12 months. Ineligible donation was less common among men who had had penetrative sex with a man recently (in previous 12 months) than among men for whom this last occurred longer ago. Reasons for non-compliance with the exclusion included self categorisation as low risk, discounting the sexual experience that barred donation, belief in the infallibility of blood screening, concerns about confidentiality, and misunderstanding or perceived inequity of the rule. Although blood donation was rarely viewed as a "right," potential donors were seen as entitled to a considered assessment of risk. A one-year deferral since last male penetrative sex was considered by study participants to be generally feasible, equitable, and acceptable. *Conclusions*: A minority of men who have sex with men who are ineligible to donate blood under the current donor exclusion in Britain have nevertheless done so in the past 12 months. Many of the reasons identified for non-compliance seem amenable to intervention. A clearly rationalised and communicated one-year donor deferral is likely to be welcomed by most men who have sex with men.

British Journal of Psychiatry

P.K. Coleman, **Abortion and Mental Health: Quantitative Synthesis and Analysis of Research Published 1995–2009,** *Br J Psychiatry* 199.3 (September 9, 2011): 180–186 • *Background*: Given the

methodological limitations of recently published qualitative reviews of abortion and mental health, a quantitative synthesis was deemed necessary to represent more accurately the published literature and to provide clarity to clinicians. *Aims*: To measure the association between abortion and indicators of adverse mental health, with subgroup effects calculated based on comparison groups (no abortion, unintended pregnancy delivered, pregnancy delivered) and particular outcomes. A secondary objective was to calculate population-attributable risk (PAR) statistics for each outcome. *Method*: After the application of methodologically based selection criteria and extraction rules to minimise bias, the sample comprised 22 studies, 36 measures of effect and 877,181 participants (163,831 experienced an abortion). Random effects pooled odds ratios were computed using adjusted odds ratios from the original studies and PAR statistics were derived from the pooled odds ratios. *Results*: Women who had undergone an abortion experienced an 81% increased risk of mental health problems, and nearly 10% of the incidence of mental health problems was shown to be attributable to abortion. The strongest subgroup estimates of increased risk occurred when abortion was compared with term pregnancy and when the outcomes pertained to substance use and suicidal behaviour. *Conclusions*: This review offers the largest quantitative estimate of mental health risks associated with abortion available in the world literature. Calling into question the conclusions from traditional reviews, the results revealed a moderately to highly increased risk of mental health problems after abortion. Consistent with the tenets of evidence-based medicine, this information should inform the delivery of abortion services.

Human Reproduction

F. E. van Leeuwen et al., **Risk of Borderline and Invasive Ovarian Tumours after Ovarian Stimulation for In Vitro Fertilization in a Large Dutch Cohort,** *Hum Reprod* 26.12 (December 2011): 3456–3465 • *Background*: Long-term effects of ovarian stimulation for IVF on the risk of ovarian malignancies are unknown. *Methods*: We identified a nationwide historic cohort of 19,146 women who received IVF treatment in the Netherlands between 1983 and 1995, and a comparison group of 6,006 subfertile women not treated with IVF. In 1997-1999, data on reproductive risk factors were obtained from 65% of women and data on subfertility (treatment) were obtained from the medical records. The incidence of ovarian malignancies (including borderline ovarian tumours) through 2007 was assessed through linkage with disease registries. The risk of ovarian malignancies in the IVF group was compared with risks in the general population and the subfertile comparison group. *Results*: After a median follow-up of 14.7 years, the risk of borderline ovarian tumours was increased in the IVF group compared with the general population [standardized incidence ratio (SIR) = 1.76; 95% confidence interval (CI) = 1.16–2.56]. The overall SIR for invasive ovarian cancer was not significantly elevated, but increased with longer follow-up after first IVF (P = 0.02); the SIR was 3.54 (95% CI = 1.62–6.72) after 15 years. The risks of borderline ovarian tumours and of all ovarian malignancies combined in the IVF group were significantly increased compared with risks in the subfertile comparison group (hazard ratios = 4.23; 95% CI = 1.25–14.33 and 2.14; 95% CI = 1.07–4.25, respectively, adjusted for age, parity and subfertility cause). *Conclusions*: Ovarian stimulation for IVF may increase the risk of ovarian malignancies, especially borderline ovarian tumours. More large cohort studies are needed to confirm these findings and to examine the effect of IVF treatment characteristics.

JAMA

J. H. Traverse et al., **Effect of Intracoronary Delivery of Autologous Bone Marrow Mononuclear Cells 2 to 3 Weeks Following Acute Myocardial Infarction on Left Ventricular Function: The LateTIME Randomized Trial,** *JAMA* 306.19 (November 16, 2011): 2110–2119 • *Context*: Clinical trial results suggest that intracoronary delivery of autologous bone marrow mononuclear

cells (BMCs) may improve left ventricular (LV) function when administered within the first week following myocardial infarction (MI). However, because a substantial number of patients may not present for early cell delivery, the efficacy of autologous BMC delivery 2 to 3 weeks post-MI warrants investigation. *Objective*: To determine if intracoronary delivery of autologous BMCs improves global and regional LV function when delivered 2 to 3 weeks following first MI. *Design, Setting, and Patients*: A randomized, double-blind, placebo-controlled trial (LateTIME) of the National Heart, Lung, and Blood Institute-sponsored Cardiovascular Cell Therapy Research Network of 87 patients with significant LV dysfunction (LV ejection fraction [LVEF] ≤ 45%) following successful primary percutaneous coronary intervention (PCI) between July 8, 2008, and February 28, 2011. *Interventions*: Intracoronary infusion of 150 × 10(6) autologous BMCs (total nucleated cells) or placebo (BMC : placebo, 2:1) was performed within 12 hours of bone marrow aspiration after local automated cell processing. *Main Outcome Measures*: Changes in global (LVEF) and regional (wall motion) LV function in the infarct and border zone between baseline and 6 months, measured by cardiac magnetic resonance imaging. Secondary end points included changes in LV volumes and infarct size. *Results*: A total of 87 patients were randomized (mean [SD] age, 57 [11] years; 83% men). Harvesting, processing, and intracoronary delivery of BMCs in this setting was feasible. Change between baseline and 6 months in the BMC group vs placebo for mean LVEF (48.7% to 49.2% vs 45.3% to 48.8%; between-group mean difference, -3.00; 95% CI, -7.05 to 0.95), wall motion in the infarct zone (6.2 to 6.5 mm vs 4.9 to 5.9 mm; between-group mean difference, -0.70; 95% CI, -2.78 to 1.34), and wall motion in the border zone (16.0 to 16.6 mm vs 16.1 to 19.3 mm; between-group mean difference, -2.60; 95% CI, -6.03 to 0.77) were not statistically significant. No significant change in LV volumes and infarct volumes was observed; both groups decreased by a similar amount at 6 months vs baseline. *Conclusion*: Among patients with MI and LV dysfunction following reperfusion with PCI, intracoronary infusion of autologous BMCs vs intracoronary placebo infusion, 2 to 3 weeks after PCI, did not improve global or regional function at 6 months.

Journal of Clinical Oncology

A.K. Chaturvedi et al., **Human Papillomavirus and Rising Oropharyngeal Cancer Incidence in the United States,** *J Clin Oncol* 29.32 (November 10, 2011): 4294–4301 • *Purpose*: Recent increases in incidence and survival of oropharyngeal cancers in the United States have been attributed to human papillomavirus (HPV) infection, but empirical evidence is lacking. *Patients and Methods*: HPV status was determined for all 271 oropharyngeal cancers (1984–2004) collected by the three population-based cancer registries in the Surveillance, Epidemiology, and End Results (SEER) Residual Tissue Repositories Program by using polymerase chain reaction and genotyping (Inno-LiPA), HPV16 viral load, and HPV16 mRNA expression. Trends in HPV prevalence across four calendar periods were estimated by using logistic regression. Observed HPV prevalence was reweighted to all oropharyngeal cancers within the cancer registries to account for nonrandom selection and to calculate incidence trends. Survival of HPV-positive and HPV-negative patients was compared by using Kaplan-Meier and multivariable Cox regression analyses. *Results*: HPV prevalence in oropharyngeal cancers significantly increased over calendar time regardless of HPV detection assay (P trend < .05). For example, HPV prevalence by Inno-LiPA increased from 16.3% during 1984 to 1989 to 71.7% during 2000 to 2004. Median survival was significantly longer for HPV-positive than for HPV-negative patients (131 v 20 months; log-rank P < 0.001; adjusted hazard ratio, 0.31; 95% CI, 0.21 to 0.46). Survival significantly increased across calendar periods for HPV-positive (P = 0.003) but not for HPV-negative patients (P = 0.18). Population-level incidence of HPV-positive oropharyngeal cancers increased by 225%

(95% CI, 208% to 242%) from 1988 to 2004 (from 0.8 per 100,000 to 2.6 per 100,000), and incidence for HPV-negative cancers declined by 50% (95% CI, 47% to 53%; from 2.0 per 100,000 to 1.0 per 100,000). If recent incidence trends continue, the annual number of HPV-positive oropharyngeal cancers is expected to surpass the annual number of cervical cancers by the year 2020. *Conclusion*: Increases in the population-level incidence and survival of oropharyngeal cancers in the United States since 1984 are caused by HPV infection.

Lancet

R. Bolli et al., **Cardiac Stem Cells in Patients with Ischaemic Cardiomyopathy (SCIPIO): Initial Results of a Randomised Phase 1 Trial,** *Lancet* 378.9806 (November 26, 2011): 1847–1857 • *Background*: c-kit-positive, lineage-negative cardiac stem cells (CSCs) improve post-infarction left ventricular (LV) dysfunction when administered to animals. We undertook a phase 1 trial (Stem Cell Infusion in Patients with Ischemic cardiOmyopathy [SCIPIO]) of autologous CSCs for the treatment of heart failure resulting from ischaemic heart disease. *Methods*: In stage A of the SCIPIO trial, patients with post-infarction LV dysfunction (ejection fraction [EF] $\leq$ 40%) before coronary artery bypass grafting were consecutively enrolled in the treatment and control groups. In stage B, patients were randomly assigned to the treatment or control group in a 2:3 ratio by use of a computer-generated block randomisation scheme. 1 million autologous CSCs were administered by intracoronary infusion at a mean of 113 days (SE 4) after surgery; controls were not given any treatment. Although the study was open label, the echocardiographic analyses were masked to group assignment. The primary endpoint was short-term safety of CSCs and the secondary endpoint was efficacy. A per-protocol analysis was used. This study is registered with ClinicalTrials.gov, number NCT00474461. *Findings*: This study is still in progress. 16 patients were assigned to the treatment group and seven to the control group; no CSC-related adverse effects were reported. In 14 CSC-treated patients who were analysed, LVEF increased from 30.3% (SE 1.9) before CSC infusion to 38.5% (2.8) at 4 months after infusion ($p=0.001$). By contrast, in seven control patients, during the corresponding time interval, LVEF did not change (30.1% [2.4] at 4 months after CABG vs 30.2% [2.5] at 8 months after CABG). Importantly, the salubrious effects of CSCs were even more pronounced at 1 year in eight patients (eg, LVEF increased by 12.3 ejection fraction units [2.1] vs baseline, $p=0.0007$). In the seven treated patients in whom cardiac MRI could be done, infarct size decreased from 32.6 g (6.3) by 7.8 g (1.7; 24%) at 4 months ($p=0.004$) and 9.8 g (3.5; 30%) at 1 year ($p=0.04$). *Interpretation*: These initial results in patients are very encouraging. They suggest that intracoronary infusion of autologous CSCs is effective in improving LV systolic function and reducing infarct size in patients with heart failure after myocardial infarction, and warrant further, larger, phase 2 studies.

D. Cruse et al., **Bedside Detection of Awareness in the Vegetative State: A Cohort Study,** *Lancet* 378.9809 (December 17, 2011): 2088–2094 • *Background*: Patients diagnosed as vegetative have periods of wakefulness, but seem to be unaware of themselves or their environment. Although functional MRI (fMRI) studies have shown that some of these patients are consciously aware, issues of expense and accessibility preclude the use of fMRI assessment in most of these individuals. We aimed to assess bedside detection of awareness with an electroencephalography (EEG) technique in patients in the vegetative state. *Methods*: This study was undertaken at two European centres. We recruited patients with traumatic brain injury and non-traumatic brain injury who met the Coma Recovery Scale-Revised definition of vegetative state. We developed a novel EEG task involving motor imagery to detect command-following—a universally accepted clinical indicator of awareness—in the absence of overt behaviour. Patients completed the task in which they were required

to imagine movements of their right-hand and toes to command. We analysed the command-specific EEG responses of each patient for robust evidence of appropriate, consistent, and statistically reliable markers of motor imagery, similar to those noted in healthy, conscious controls. *Findings*: We assessed 16 patients diagnosed in the vegetative state, and 12 healthy controls. Three (19%) of 16 patients could repeatedly and reliably generate appropriate EEG responses to two distinct commands, despite being behaviourally entirely unresponsive (classification accuracy 61–78%). We noted no significant relation between patients' clinical histories (age, time since injury, cause, and behavioural score) and their ability to follow commands. When separated according to cause, two (20%) of the five traumatic and one (9%) of the 11 non-traumatic patients were able to successfully complete this task. *Interpretation*: Despite rigorous clinical assessment, many patients in the vegetative state are misdiagnosed. The EEG method that we developed is cheap, portable, widely available, and objective. It could allow the widespread use of this bedside technique for the rediagnosis of patients who behaviourally seem to be entirely vegetative, but who might have residual cognitive function and conscious awareness.

Lancet Infectious Diseases

R. Heffron et al., **Use of Hormonal Contraceptives and Risk of HIV-1 Transmission: A Prospective Cohort Study,** *Lancet Infect Dis* 12.1 (January 2012): 19–26. • *Background*: Hormonal contraceptives are used widely but their effects on HIV-1 risk are unclear. We aimed to assess the association between hormonal contraceptive use and risk of HIV-1 acquisition by women and HIV-1 transmission from HIV-1-infected women to their male partners. *Methods*: In this prospective study, we followed up 3790 heterosexual HIV-1-serodiscordant couples participating in two longitudinal studies of HIV-1 incidence in seven African countries. Among injectable and oral hormonal contraceptive users and non-users, we compared rates of HIV-1 acquisition by women and HIV-1 transmission from women to men. The primary outcome measure was HIV-1 seroconversion. We used Cox proportional hazards regression and marginal structural modelling to assess the effect of contraceptive use on HIV-1 risk. *Findings*: Among 1314 couples in which the HIV-1-seronegative partner was female (median follow-up 18.0 [IQR 12.6–24.2] months), rates of HIV-1 acquisition were 6.61 per 100 person-years in women who used hormonal contraception and 3.78 per 100 person-years in those who did not (adjusted hazard ratio 1.98, 95% CI 1.06–3.68, p=0.03). Among 2476 couples in which the HIV-1-seronegative partner was male (median follow-up 18.7 [IQR 12.8–24.2] months), rates of HIV-1 transmission from women to men were 2.61 per 100 person-years in couples in which women used hormonal contraception and 1.51 per 100 person-years in couples in which women did not use hormonal contraception (adjusted hazard ratio 1.97, 95% CI 1.12–3.45, p=0.02). Marginal structural model analyses generated much the same results to the Cox proportional hazards regression. *Interpretation*: Women should be counselled about potentially increased risk of HIV-1 acquisition and transmission with hormonal contraception, especially injectable methods, and about the importance of dual protection with condoms to decrease HIV-1 risk. Non-hormonal or low-dose hormonal contraceptive methods should be considered for women with or at-risk for HIV-1.

Lancet Oncology

X. Castellsagué et al., **Intrauterine Device Use, Cervical Infection with Human Papillomavirus, and Risk of Cervical Cancer: A Pooled Analysis of 26 Epidemiological Studies,** *Lancet Oncol* 12.11 (October 2011): 1023–1031 • *Background*: Intrauterine device (IUD) use has been shown to reduce the risk of endometrial cancer, but little is known about its association with cervical cancer risk. We assessed whether IUD use affects cervical human papillomavirus (HPV)

infection and the risk of developing cervical cancer. *Methods*: We did a pooled analysis of individual data from two large studies by the International Agency for Research on Cancer and Institut Català d'Oncologia research programme on HPV and cervical cancer; one study included data from ten case-control studies of cervical cancer done in eight countries, and the other included data from 16 HPV prevalence surveys of women from the general population in 14 countries. 2205 women with cervical cancer and 2214 matched control women without cervical cancer were included from the case-control studies, and 15,272 healthy women from the HPV surveys. Information on IUD use was obtained by personal interview. HPV DNA was tested by PCR-based assays. Odds ratios and 95% CIs were estimated using multivariate unconditional logistic regression for the associations between IUD use, cervical HPV DNA, and cervical cancer. *Findings*: After adjusting for relevant covariates, including cervical HPV DNA and number of previous Papanicolaou smears, a strong inverse association was found between ever use of IUDs and cervical cancer (odds ratio 0.55, 95% CI 0.42–0.70; $p < 0.0001$). A protective association was noted for squamous-cell carcinoma (0.56, 0.43–0.72; $p < 0.0001$), adenocarcinoma and adenosquamous carcinoma (0.46, 0.22–0.97; $p = 0.035$), but not among HPV-positive women (0.68, 0.44–1.06; $p = 0.11$). No association was found between IUD use and detection of cervical HPV DNA among women without cervical cancer. *Interpretation*: Our data suggest that IUD use might act as a protective cofactor in cervical carcinogenesis. Cellular immunity triggered by the device might be one of several mechanisms that could explain our findings.

New England Journal of Medicine

P. Mathurin et al., **Early Liver Transplantation for Severe Alcoholic Hepatitis,** *N Engl J Med* 365.19 (November 10, 2011): 1790–1800 • *Background*: A 6-month abstinence from alcohol is usually required before patients with severe alcoholic hepatitis are considered for liver transplantation. Patients whose hepatitis is not responding to medical therapy have a 6-month survival rate of approximately 30%. Since most alcoholic hepatitis deaths occur within 2 months, early liver transplantation is attractive but controversial. *Methods*: We selected patients from seven centers for early liver transplantation. The patients had no prior episodes of alcoholic hepatitis and had scores of 0.45 or higher according to the Lille model (which calculates scores ranging from 0 to 1, with a score ≥ 0.45 indicating nonresponse to medical therapy and an increased risk of death in the absence of transplantation) or rapid worsening of liver function despite medical therapy. Selected patients also had supportive family members, no severe coexisting conditions, and a commitment to alcohol abstinence. Survival was compared between patients who underwent early liver transplantation and matched patients who did not. *Results*: In all, 26 patients with severe alcoholic hepatitis at high risk of death (median Lille score, 0.88) were selected and placed on the list for a liver transplant within a median of 13 days after nonresponse to medical therapy. Fewer than 2% of patients admitted for an episode of severe alcoholic hepatitis were selected. The centers used 2.9% of available grafts for this indication. The cumulative 6-month survival rate (±SE) was higher among patients who received early transplantation than among those who did not (77±8% vs. 23±8%, $P < 0.001$). This benefit of early transplantation was maintained through 2 years of follow-up (hazard ratio, 6.08; $P = 0.004$). Three patients resumed drinking alcohol: one at 720 days, one at 740 days, and one at 1140 days after transplantation. *Conclusions*: Early liver transplantation can improve survival in patients with a first episode of severe alcoholic hepatitis not responding to medical therapy.

S.J. Nicholls et al., **Effect of Two Intensive Statin Regimens on Progression of Coronary Disease,** *N Engl J Med* 365.22 (December 1, 2011): 2078–2087 • *Background*: Statins reduce adverse cardiovascular outcomes and slow the progression of

coronary atherosclerosis in proportion to their ability to reduce low-density lipoprotein (LDL) cholesterol. However, few studies have either assessed the ability of intensive statin treatments to achieve disease regression or compared alternative approaches to maximal statin administration. *Methods*: We performed serial intravascular ultrasonography in 1039 patients with coronary disease, at baseline and after 104 weeks of treatment with either atorvastatin, 80 mg daily, or rosuvastatin, 40 mg daily, to compare the effect of these two intensive statin regimens on the progression of coronary atherosclerosis, as well as to assess their safety and side-effect profiles. *Results*: After 104 weeks of therapy, the rosuvastatin group had lower levels of LDL cholesterol than the atorvastatin group (62.6 vs. 70.2 mg per deciliter [1.62 vs. 1.82 mmol per liter], P<0.001), and higher levels of high-density lipoprotein (HDL) cholesterol (50.4 vs. 48.6 mg per deciliter [1.30 vs. 1.26 mmol per liter], P=0.01). The primary efficacy end point, percent atheroma volume (PAV), decreased by 0.99% (95% confidence interval [CI], -1.19 to -0.63) with atorvastatin and by 1.22% (95% CI, -1.52 to -0.90) with rosuvastatin (P=0.17). The effect on the secondary efficacy end point, normalized total atheroma volume (TAV), was more favorable with rosuvastatin than with atorvastatin: -6.39 mm(3) (95% CI, -7.52 to -5.12), as compared with -4.42 mm(3) (95% CI, -5.98 to -3.26) (P=0.01). Both agents induced regression in the majority of patients: 63.2% with atorvastatin and 68.5% with rosuvastatin for PAV (P=0.07) and 64.7% and 71.3%, respectively, for TAV (P=0.02). Both agents had acceptable side-effect profiles, with a low incidence of laboratory abnormalities and cardiovascular events. *Conclusions*: Maximal doses of rosuvastatin and atorvastatin resulted in significant regression of coronary atherosclerosis. Despite the lower level of LDL cholesterol and the higher level of HDL cholesterol achieved with rosuvastatin, a similar degree of regression of PAV was observed in the two treatment groups.

Pediatrics

R. P. Berger et al., **Abusive Head Trauma during a Time of Increased Unemployment: A Multicenter Analysis,** *Pediatrics* 128.4 (October 2011): 637–643 • *Objective*: To evaluate the rate of abusive head trauma (AHT) in 3 regions of the United States before and during an economic recession and assess whether there is a relationship between the rate of AHT and county-level unemployment rates. *Methods*: Clinical data were collected for AHT cases diagnosed in children younger than 5 years from January 1, 2004 until June 30, 2009, by hospital-based child protection teams within 3 geographic regions. The recession was defined as December 1, 2007, through June 30, 2009. Quarterly unemployment rates were collected for every county in which an AHT case occurred. *Results*: During the 5½-year study period, a total of 422 children were diagnosed with AHT in a 74-county region. The overall rate of AHT increased from 8.9 in 100,000 (95% confidence interval [CI]: 7.8–10.0) before the recession to 14.7 in 100,000 (95% CI: 12.5–16.9) during the recession (P<.001). There was no difference in the clinical characteristics of subjects in the prerecession versus recession period. There was no relationship between the rate of AHT and county-level unemployment rates. *Conclusions*: The rate of AHT increased significantly in 3 distinct geographic regions during the 19 months of an economic recession compared with the 47 months before the recession. This finding is consistent with our understanding of the effect of stress on violence. Given the high morbidity and mortality rates for children with AHT, these results are concerning and suggest that prevention efforts might need to be increased significantly during times of economic hardship.