**Selected published abstracts of Baylor researchers**

**AMERICAN JOURNAL OF CARDIOLOGY**

Some previously neglected examples of arrhythmogenic right ventricular dysplasia/cardiomyopathy and frequency of its various reported manifestations

Roberts WC, Ko JM, Kuper JJ, Hall SA, Meyer DM


Four patients are described with either parchment-like thinning or partial but extensive myocyte depletion with severe fatty or fibrofatty infiltration of the free wall of the right ventricle in its outflow tract, including 2 previously reported patients who also had focal parchment-like thinning of the left ventricular free wall. Three had documented ventricular tachycardia, and the remaining patient had sudden death as his first and only manifestation of heart disease. Three patients had severe heart failure: in 1, it was fatal, and the other 2 underwent cardiac transplantation. Necropsy cases of parchment-heart syndrome before 1980 are reviewed, as well as large series of cases with arrhythmogenic right ventricular dysplasia (ARVD) reported subsequently. It is suggested that ARVD is not an ideal name for this condition, because malignant ventricular arrhythmias are not universal, the left ventricular free wall and/or ventricular septum are sometimes involved, and the name “ARVD” neglects the fact that severe heart failure may be prominent in these patients. The right ventricular wall can be thin or parchment-like, or it may not be thinned but consist mainly of adipose tissue with or without focal fibrous tissue and a few islands of myocytes. Nevertheless, because the name “ARVD” has been commonly used and recognized for >30 years, it is probably best retained for this condition.

**AMERICAN JOURNAL OF CLINICAL NUTRITION**

The contribution of malabsorption to the reduction in net energy absorption after long-limb Roux-en-Y gastric bypass


**Background:** Roux-en-Y gastric bypass (RYGB) restricts food intake, and when the Roux limb is elongated to 150 cm, the procedure is believed to induce malabsorption.

**Objective:** Our objective was to measure total reduction in intestinal absorption of combustible energy after RYGB and the extent to which this was due to restriction of food intake or malabsorption of ingested macronutrients.

**Design:** Long-limb RYGB was performed in 9 severely obese patients. Dietary intake and intestinal absorption of fat, protein, carbohydrate, and combustible energy were measured before and at 2 intervals after bypass. By using coefficients of absorption to measure absorptive function, equations were developed to calculate the daily gram and kilocalorie quantities of ingested macronutrients that were not absorbed because of malabsorption or restricted food intake.

**Results:** Coefficients of fat absorption were 92 ± 1.3% before bypass, 72 ± 5.5% 5 mo after bypass, and 68 ± 8.7% 14 mo after bypass. There were no statistically significant effects of RYGB on protein or carbohydrate absorption coefficients, although protein coefficients decreased substantially in some patients. Five months after bypass, malabsorption reduced absorption of combustible energy by 124 ± 57 kcal/d, whereas restriction of food intake reduced energy absorption by 2062 ± 271 kcal/d. Fourteen months after bypass, malabsorption reduced energy absorption by 172 ± 60 kcal/d compared with 1418 ± 171 kcal/d caused by restricted food intake.

**Conclusions:** On average, malabsorption accounted for approximately 6% and 11% of the total reduction in combustible energy absorption at 5 and 14 mo, respectively, after this gastric bypass procedure.

**ANNALS OF THORACIC SURGERY**

New-onset postoperative atrial fibrillation and long-term survival after aortic valve replacement surgery


**Background:** Atrial fibrillation (AF) is recognized as a common complication of open cardiac surgery, occurring in up to 65% of patients. The advancing age and increasing risk profile of patients receiving aortic valve replacement (AVR) surgery is expected to raise incidence of new-onset postoperative AF resulting in potentially higher risk of adverse outcomes. In the early postoperative course, new-onset post-AVR AF is considered relatively easy to treat and is believed to have little impact on patients’ long-term outcome. However, the effect of new-onset post-AVR AF on long-term survival is unclear.

**Methods:** Survival was assessed in 1,039 consecutive patients without preoperative AF who underwent AVR with or without simultaneous coronary artery bypass graft at Baylor University Medical Center, Dallas, Texas between January 1, 1997 and December 31, 2006.

**Results:** Ten-year unadjusted survival was 50.8% for patients with new-onset postoperative AF and 59.4% for patients without. A propensity-adjusted model controlling for risk factors identified by the Society of Thoracic Surgeons and other clinical-nonclinical details was used to investigate the association between new-onset AF post-AVR and survival. After adjustment, new-onset AF post-AVR was significantly associated with increased risk of death (hazard ratio: 1.48; 95% confidence interval 1.12 to 1.96).

**Conclusions:** This study provides evidence that new-onset post-AVR AF is significantly associated with increased long-term risk of mortality independent of the preoperative severity of disease. After controlling
for a comprehensive array of risk factors associated with post-AVR adverse outcomes, risk of long-term mortality in patients who developed new-onset post-AVR AF was 48% higher than in patients without it.

**BMC BIOLOGY**

Assessing the human immune system through blood transcriptomics

Chaussabel D, Pascual V, Banchereau J

*BMC Biol* 2010;8:84. Reprinted with permission.

Blood is the pipeline of the immune system. Assessing changes in transcript abundance in blood on a genome-wide scale affords a comprehensive view of the status of the immune system in health and disease. This review summarizes the work that has used this approach to identify therapeutic targets and biomarker signatures in the field of autoimmunity and infectious disease. Recent technological and methodological advances that will carry the blood transcriptome research field forward are also discussed.

**CATHETERIZATION AND CARDIOVASCULAR INTERVENTIONS**

Successful percutaneous retrieval of methyl methacrylate orthopedic cement embolism from the pulmonary artery

Bose R, Choi JW


Vertebroplasty cement embolization into the venous system has long been recognized as a potential complication, but the true incidence of systemic embolization is unknown. Clinical presentations range from patients who are asymptomatic or have incidental findings on imaging to massive pulmonary embolism resulting in death. Optimal treatment is controversial and the natural history is unknown. We present the case of an 85-year-old female undergoing combined laminectomy and vertebroplasty with subsequent pulmonary embolism of the cement which was successfully retrieved from a percutaneous approach.

**CLINICAL COLORECTAL CANCER**

Referral patterns and adjuvant chemotherapy use in patients with stage II colon cancer

Kirkpatrick HM, Altelli CL, Qin H, Becerra C, Lichtiler WE, McCollum AD


Little is known about the actual rate of use of adjuvant chemotherapy in stage II colon cancer and about referral patterns that give patients access to this treatment.

**Results:** We identified 287 patients with stage II colon cancer. A total of 160 patients (56%) were referred to a medical oncologist. Eighty patients (28%) received adjuvant chemotherapy. Age < 50 years, private insurance status, lower comorbidity score, higher T stage, and poor tumor differentiation were significant predictors of adjuvant chemotherapy use (*P* ≤ .05).

**Conclusion:** Variability and controversy exist over the use of adjuvant chemotherapy in patients with stage II colon cancer. Our study suggests many patients are not referred to a medical oncologist and may not be fully informed of all treatment options. Referral patterns become more important as a better understanding of recurrence risk is achieved and patient selection for adjuvant chemotherapy is optimized.

**CLINICAL LYMPHOMA, MYELOMA, AND LEUKEMIA**

Comparison of serum immunofixation electrophoresis and free light chain assays in the detection of monoclonal gammopathies

Wood PB, McElroy YG, Stone MJ


**Background:** Diagnosis of monoclonal gammopathies (MGs) is determined by demonstration of a monoclonal immunoglobulin molecule or chain in serum and/or urine. Previous results on immunofixation electrophoresis (IFE) and quantitative free light chain (FLC) measurements have been conflicting.

**Patients and methods:** The purpose of this study was to compare IFE with serum FLC assays in the detection of MG. Between November 2006 and November 2007, results on routinely ordered serum IFE specimens were compared with independently conducted FLC assays.

**Results:** Monoclonal gammopathies were identified in 144 specimens by IFE: 73 patients (50.7%) had a normal kappa/lambda ratio in the FLC assay. Also, 44.6% of samples with IgG and IgA M-proteins had a normal kappa/lambda ratio. Of 357 sera that showed no M-protein by IFE, 95.8% exhibited a normal kappa/lambda ratio. Out of 11 patients with light chain disease, 9 had abnormal kappa/lambda ratios. It is unclear why half of the patients with MG by IFE had normal kappa/lambda ratios. Lower M-components in these patients suggested that some had monoclonal gammopathy of undetermined significance.

**Conclusion:** For screening purposes, serum IFE should be carried out in patients with suspected MG.

**DIGESTIVE DISEASES AND SCIENCES**

Dieulafoy lesions of the GI tract: localization and therapeutic outcomes

Lara LF, Sreenarasimhaiah J, Tang SJ, Afonso BB, Rockey DC


**Objectives:** Dieulafoy lesions are a rare cause of gastrointestinal hemorrhage with a striking presentation because of rapid blood loss. Endoscopic therapy is usually successful at achieving primary
hemostasis, but the best mode of endoscopic intervention is not clear, and outcomes relating to variables such as gender, medication, alcohol, and smoking are not known. We reviewed the clinical experience with Dieulafoy lesions at our institution, focusing on clinico-epidemiological features, management practices, and also survival.

Methods: A retrospective and prospective cohort of patients with Dieulafoy lesions who underwent endoscopy from January 2004 through April 2009 were studied and detailed clinical data were abstracted and collected.

Results: We identified 63 patients with a Dieulafoy lesion. The majority were male with an average age 58 years. Hematemesis and melena were the most common presenting symptoms. Almost half the patients were on anticoagulation medication. Most of the Dieulafoy lesions occurred in the upper GI tract, and mostly in the stomach. Single-modality endoscopic therapy was used as frequently as combination therapy, and both were effective, as primary hemostasis was achieved in 92% of cases. There were 11 deaths overall; death due to Dieulafoy lesion exsanguination was attributed to three patients.

Conclusions: Dieulafoy lesions occurred in younger patients than previously reported, and were more frequently diagnosed in males. Most DL lesions occurred in the upper GI tract. Primary hemostasis with endoscopic therapy was highly successful. Overall mortality was 17%, and associated with co-morbidities, and not with medical history, gender, age, or medication.

EUROPEAN JOURNAL OF CANCER

Long-term safety of sorafenib in advanced renal cell carcinoma: follow-up of patients from phase III TARGET

Hutson TE, Bellmunt J, Porta C, Szczylik C, Staehler M, Nadel A, Anderson S, Bukowski R, Eisen T, Escudier B; Sorafenib TARGET Clinical Trial Group


Background: The phase III Treatment Approaches in Renal cancer Global Evaluation Trial (TARGET) indicated that sorafenib is effective and well tolerated in advanced renal cell carcinoma patients. However, few data have been published on the safety of long-term sorafenib treatment. A retrospective subgroup analysis was performed to evaluate the efficacy and safety of sorafenib in patients in TARGET who received treatment for >1 year.

Methods: The present subgroup analysis (based on the September 2006 database with updated safety analysis) evaluated the efficacy and safety of sorafenib in all patients in the sorafenib arm of TARGET who were treated for >1 year. The assessments included the overall survival, progression-free survival (PFS), disease control rate (DCR), and safety. The patients remained on therapy post-progression at the discretion of the investigator.

Results: In TARGET, 169 patients received treatment with sorafenib for >1 year. The median PFS of patients in this subpopulation was 10.9 months from the date of randomisation, with a DCR of 92%. The most commonly reported treatment-related adverse events of any grade were diarrhoea (74%), rash/desquamation (51%), hand-foot skin reaction (49%), alopecia (39%), and fatigue (38%). Adverse events were mild to moderate, and presented early in the course of the treatment; there were no unexpected toxicities associated with the long-term administration of sorafenib.

Conclusions: Results of this subgroup analysis of patients enrolled in TARGET who received treatment for >1 year indicate that long-term treatment with sorafenib is associated with continued efficacy and a well-tolerated safety profile.

JOURNAL OF PAIN AND SYMPTOM MANAGEMENT

Keeping the patient at the center of patient- and family-centered care

Fine RL


The practice of palliative care typically refers to the focus of treatment as the patient and family. Tending to the needs of both patients and their families is usually good, but what should clinicians do when they perceive the best interests, needs, or treatment preferences of the patient in conflict with those of the family or other surrogate? Physicians may be able to suppress the inevitable moral cognitive dissonance of such circumstances, write orders, and walk away, but other health care professionals, especially nurses, may not have it so easy. This article will suggest practical steps to obviate conflict in such circumstances before offering an ethical analysis focusing on notions of autonomy, beneficence, and true caring for patients, especially those near the end of life. The limitations of surrogate decision makers are considered and legal liability concerns are briefly explored, ultimately leading to the conclusion that keeping the patient at the center of patient and family centered care is the sine qua non of patient and family centered care.

LUPUS

The interferon-alpha signature of systemic lupus erythematosus

Obermoser G, Pascual V

Lupus 2010;19(9):1012–1019. Reprinted by permission of SAGE.

Systemic lupus erythematosus (SLE) is a prototypic multisystem autoimmune disorder where interplay of environmental and genetic risk factors leads to progressive loss of tolerance to nuclear antigens over time, finally culminating in clinical disease. The heterogeneity of clinical manifestations and the disease’s unpredictable course characterized by flares and remissions are very likely a reflection of heterogeneity at the origin of disease, with a final common pathway leading to loss of tolerance to nuclear antigens. Impaired clearance of immune complexes and apoptotic material and production of autoantibodies have long been recognized as major pathogenic events in this disease. Over the past decade the type I interferon cytokine family has been postulated to play a central role in SLE pathogenesis, by promoting feedback loops progressively disrupting peripheral immune tolerance and driving disease activity. The identification of key molecules involved in the pathogenesis of SLE will not only improve our understanding of this complex disease, but also help to identify novel targets for biological intervention.
Overview of common, rare and atypical manifestations of cutaneous lupus erythematosus and histopathological correlates

Obermoser G, Sontheimer RD, Zelger B

Lupus 2010;19(9):1050–1070. Reprinted by permission of SAGE.

The skin is the second most frequently affected organ system in lupus erythematosus. Although only very rarely life threatening—an example is lupus erythematosus-associated toxic epidermal necrolysis—skin disease contributes disproportionally to disease burden in terms of personal and psychosocial wellbeing, vocational disability, and hence in medical and social costs. Since several manifestations are closely associated with the presence and activity of systemic lupus erythematosus, prompt and accurate diagnosis of cutaneous lupus erythematosus is essential. This review aims to cover common, rare, and atypical manifestations of lupus erythematosus-associated skin disease with a detailed discussion of histopathological correlates. Cutaneous lupus erythematosus covers a wide morphological spectrum well beyond acute, subacute and chronic cutaneous lupus erythematosus, which are commonly classified as lupus-specific skin disease. Other uncommon or less well-known manifestations include lupus erythematosus tumidus, lupus profundus, chilblain lupus, macular lupus erythematosus, and bullous lupus erythematosus. Vascular manifestations include leukocytoclastic and urticarial vasculitis, livedoid vasculopathy and livedo reticularis/racemosa. Finally, we discuss rare presentations such as lupus erythematosus-related erythema exsudativum multiforme (Rowell syndrome), Kikuchi-Fujimoto disease, extravascular necrotizing palisaded granulomatous dermatitis (Winkelmann granuloma), and neutrophilic urticarial dermatosis.

MOLECULAR GENETICS AND METABOLISM

Adult polyglucosan body disease (APBD): anaplerotic diet therapy (triheptanoin) and demonstration of defective methylation pathways

Roe CR, Bottiglieri T, Wallace M, Arning E, Martin A


APBD is a rare disorder most often affecting adults of Ashkenazi Jewish origin due to partial deficiency of the glycogen brancher enzyme (GBE). It is characterized by progressive involvement of both the central and peripheral nervous systems and deposition of amyllopectin-like polyglucosan bodies. There have been no metabolic derangements that might suggest effective therapy nor have there been any clinical improvements for control of its relentless progression. The APBD patients, in this study, experienced stabilization of disease progression, and limited functional improvement in most patients with dietary triheptanoin. Due to a plateau in clinical improvement, the reduced and limited functional improvement in most patients with dietary triheptanoin diet therapy and the existence of significant derangement of methylation pathways that, when corrected, may lead to even greater therapeutic benefits.

RADIOGRAPHICS

Emergency imaging assessment of acute, nontraumatic conditions of the head and neck

Capps EF, Kinsella JJ, Gupta M, Bhatki AM, Opatowsky MJ


Patients often present to the emergency department with a wide variety of nontraumatic infectious, inflammatory, and neoplastic conditions of the head and neck. Because the use of cervical and neck computed tomography (CT) has become routine in the emergency setting, knowledge of the imaging findings of common acute conditions of the head and neck is essential to ensure an accurate diagnosis of these potentially life-threatening conditions, which include oral cavity infections, tonsillitis and peritonsillar abscess, sialadenitis, parotiditis, diskitis, thrombophlebitis, periorbital and orbital cellulitis, infectious cervical lymphadenopathy, and various neoplasms. Less common conditions that require rapid diagnosis and treatment include epiglottitis, invasive fungal sinusitis, angioedema, and deep neck abscess. Familiarity with these conditions enables the radiologist to make a prompt diagnosis, assess the extent of disease, and evaluate for potential complications. CT is the first-line imaging modality in the emergency setting; however, magnetic resonance imaging plays an important secondary role.

TRANSPLANTATION PROCEEDINGS

Neurogenic differentiation 1 directs differentiation of cytokeratin 19–positive human pancreatic nonendocrine cells into insulin-producing cells

Shimoda M, Chen S, Noguchi H, Matsumoto S, Grayburn PA


Background: It has been reported that the human pancreatic nonendocrine fraction, which remains after islet isolation, can be differentiated toward beta cells. However, the optimal method to accomplish this goal has not been established. In this study, we introduced the human neurogenic differentiation 1 (NeuroD1) gene into human nonendocrine pancreatic epithelial cells (NEPECs) and promoted insulin-producing cells in vitro.

Methods: The human pancreatic nonislet fractions were obtained from brain-dead donors and cultured in suspension for 2-3 days followed by culture with G418 for 4 days. These cells (NEPECs) were then plated on dishes. The NEPECs spread into a cell monolayer within 7 days and all of the cells were cytokeratin-19 (CK19) positive. Seven days after plating, plasmids encoding human NeuroD1 gene under human
CK19 promoter were transfected 3 times every other day (termed NEPEC+ND). Seven days after starting induction, these cells were characterized.

Results: Seven days after starting the induction of human NeuroD1, NEPEC+ND strongly expressed NeuroD1 and insulin mRNA. The ratio of NeuroD1-positive cells in NEPEC+ND was significantly higher than in NEPEC. Human insulin-positive cells in NEPEC+ND were also significantly greater than in NEPEC. Human insulin and C-peptide levels in culture medium in NEPEC+ND were significantly higher than in NEPEC.

Conclusions: These findings demonstrated that human NeuroD1 under control of the CK19 promoter can induce the differentiation of CK19-positive NEPECs into insulin-producing cells.