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β-Thujaplicin: A Soil Antifungal

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Journal of Patient-Centered Research and Reviews (JPCRR) is a peer-reviewed scientific journal whose mission is to communicate clinical and bench research findings, with the goal of improving the quality of human health, the care of the individual patient, and the care of populations.



consecutive patients (mean age 67 ± 14.15 years, 50.72% women) with ALI (Rutherford category IIb) who underwent CDT only (57.9%) or CDT plus bailout Angiojet mechanical thrombectomy (36.78%) at Aurora St. Luke's Medical Center from January 2004 to October 2014. Data were collected from electronic medical records, procedures reports, laboratory data and billing codes. Continuous variables were expressed as means \pm standard deviation and range; categorical variables were expressed as frequency count and percentage.

Results: Sites of target vessel for CDT were native vessel arterial thrombosis (68.11%) and vascular bypass graft thrombosis (27.5%). Reestablishment of blood flow and clinical success was achieved in 75.4% of patients, while limb salvage at 30 days was achieved in 87.1%. Amputation at 30 days occurred in 12.9%. Surgical embolectomy was required in 15.9%, and lower extremity bypass surgery was required in 8.7%. Time to lysis was 26.12 ± 18.6 hours. Bleeding complications that required blood transfusion occurred in 21% and hemorrhagic stroke in 1.44%.

Conclusion: Catheter-directed thrombolysis for acute limb ischemia with symptoms less than 14 days (Rutherford category IIb) in native artery or bypass graft thrombosis has high immediate clinical success rate and very high limb salvage rate at 30 days. CDT is a reasonable minimally invasive alternative option to emergent surgical revascularization.

PRACTC: Practice Readiness Academic Clinical Training Collaborative — Gap Analysis to Advance Clinical Training for Nurse Practitioner Students

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Background: Multiple factors have created a perfect storm of health care provider shortages in the United States. Advanced practice registered nurses (APRNs), long established as high-quality, cost-effective health care providers, are meeting health care needs across the nation in a variety of settings, and in Wisconsin will be needed to augment the primary care workforce. With 5.7% of its registered nurses credentialed as APRNs, Wisconsin lags behind the national average of 8.7%. However, current capacity to educate this workforce is strained, requiring innovative data-driven clinical education models.

Purpose: To identify gaps in the current clinical educational framework for nurse practitioner (NP) students within the integrated health system.

Methods: Multiple data sources were used including NP core learning goals achievement, current continuum education/training experience models, health care system

stakeholders' perspectives, and advanced practice provider hiring targets for 2015. NP-partnering universities' curricula and experiences of placing students within the integrated health system were reviewed. Analysis was conducted by an interprofessional team to identify gaps.

Results: Four gaps were identified: 1) structured learning and assessments focused on value-based care models (e.g. population, chronic disease) and tracking competency-based milestone achievement; 2) streamlined NP student placement system and onboarding through centralized one-stop infrastructure; 3) interdisciplinary education to emulate the workplace in which practice-ready graduates will be placed; and 4) number of preceptors with skills and knowledge regarding NP educational curriculum and competencies.

Conclusion: Systematic gap analysis will guide NP student placement and education at large Midwestern integrated health system. A structured clinical academic partnership with local university NP programs (PRACTC) that addresses preclinical preparedness, a structured student placement process, coordinated clinical experiences, preceptor development strategies and a diversity strategy provides a mechanism for accomplishing these goals.

β -Thujaplicin: A Soil Antifungal

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Background: β -thujaplicin (β -Th), also known as hinokitiol, naturally occurs in cedar mulch, is found in personal care products and has in vitro antitumor activities. It is antibacterial and antifungal, but has not been tested on soil. *Scedosporium apiospermum* (Sc) is an emerging "extremophile" fungal pathogen found in built outdoor environments.

Purpose: Pilot β -Th as "natural" soil antimicrobial or for isolation of extremophiles, and to explore β -Th resistance as selective advantage to Sc in mulched landscape.

Methods: A variety of outdoor and indoor environments were used for 2 sets of 24 paired soil samples. Soil/H₂O slurry (0.1 ml) was spread on Sabouraud dextrose agar with titrated β -Th levels of 0, 25, 250 and 500 mg/L at 20° C. Fungal and bacterial growth was semiquantitated with 4-point Likert scale. Wilcoxon signed rank test was used for comparison. A local soil Sc isolate was tested on each β -Th concentration.

Results: There was no significant inhibition of total bacterial growth at β -Th 250 mg/L (mean 1.7/4) or 500 mg/L (mean 1.7) compared to plain Sabouraud dextrose agar (mean 1.6). Purple bacteria seemed to be selected for by β -Th. Fungal inhibition was essentially complete, similar, and significantly different from no β -Th (mean 3.4/4) at levels of 250 (mean 0.1) and 500 mg/L (mean 0.0). There was no significant fungal inhibition at 25 mg/L (mean 3.2, second set samples). Similarly, Sc was completely inhibited at 250 and 500 mg/L, but not inhibited at 25 mg/L.

Conclusion: In vitro, β -thujaplicin profoundly, but

nonselectively, inhibits fungal growth in soil samples at moderately high levels. It does not appear likely that this *Scedosporium apiospermum* strain employs β -Th resistance for selective advantage in cedar mulched landscaping.

Mailed At-Home FIT Intervention to Increase Colorectal Screenings at Sixteenth Street Community Health Centers

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Background: Mailed at-home FIT intervention kits to increase colorectal cancer screenings at Sixteenth Street Community Health Centers (SSCHC).

Purpose: It is our goal to increase the current SSCHC colorectal cancer baseline screening rate of 23% to 50% within three years of full at-home FIT kit implementation.

Methods: Colon cancer is the second and third most common cause of cancer death in the United States in Hispanic men and women, respectively. Colonoscopy is the most common method of colon cancer screening, even among low-income patients. However, it has been shown in community health centers that mailed FIT kits are a more effective outreach method (40.7% completion) than colonoscopy outreach (24.6%) or usual care (12.1%). We hope to increase colorectal cancer screening in eligible patients at the SSCHC through mailed at-home FIT kits that have FIT materials, instructions and educational materials based on the Health Belief Model.

Results: A trial intervention will assess the potential for annual implementation with hopes of full implementation to all of SSCHC eligible patients in the future.

Conclusion: Application of culturally relevant interventions can be a practical and inexpensive method of increasing colorectal screening rates in community health centers with predominantly Hispanic populations.

Maternal Intuition of Fetal Gender

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Background: Many pregnant mothers feel they have a perception or intuition as to the gender of their unborn baby. There is very little published scientific literature regarding this topic. The study's goal is to determine accuracy of mothers' perceptions as to gender of their unborn babies. Many scientists believe a pregnant woman could not determine her baby's gender by intuition, with a 50% probability of correctly determining the gender. This study

should be considered fun science.

Purpose: To objectively measure a pregnant mother's perception as to the gender of her unborn baby and compare to sonographically proved gender. The study also will measure the percentage of pregnant patients who have this intuition.

Methods: All patients will be presenting for their second-trimester screening ultrasound in the Obstetrics Department of Aurora Sheboygan Clinic and must be 17–23 weeks pregnant. A medical sonographer will describe the ultrasound exam and obtain appropriate consent and medical history. The patient will be asked if they have perception as to the fetal gender; their answer will be logged. Patients with knowledge of fetal gender will be excluded from this study.

Results: Thus far, 128 patients have qualified for the study (with an expected cohort of 400). Approximately one-third of our patient population has "intuition" or "perception" on the gender of their baby. Of these, 47% correctly indicated fetal gender, 53% did not. Within this study, we've started categorizing patients who have a strong intuition of fetal gender. This cohort has correctly indicated gender with 90% accuracy; however, there are not enough participants for clinical relevancy at this point in the study.

Conclusion: Preliminary data indicates mom perception of fetal gender is 47% accurate.

Disease-Management in Family Medicine Clinics Through the Addition of a Health Coach: A Pilot Study

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Background: In the United States, more than 80% of health care spending is focused on the management of chronic illnesses such as hypertension, diabetes and hyperlipidemia. Controlling these chronic diseases can lead to better health outcomes and decrease the number of preventable deaths. Patient self-management has shown to improve clinical outcomes. In a primary care setting, a multidisciplinary approach can more effectively educate patients on improving their health.

Purpose: To assess the impact of a health coach in a primary care setting as it relates to clinical outcomes.

Methods: Patients from two Aurora family medicine clinics were referred to a health coach by primary care providers. A total of 40 patients participated and paid out of pocket for the health coaching sessions (intervention). Patients had at least one scheduled session with the health coach that covered topics such as healthy eating, weight loss and exercise. Patient data, including glycohemoglobin, lipid panels and blood pressures, were reviewed pre- and postintervention.