

Hot Articles

“February|2017”

Health Science



Title:	Repeatability of whole-cornea measurements using an anterior segment imaging device based on OCT and Placido-disk
Author:	Noelia Martínez-Albert, José J. Esteve-Taboada & Robert Montés-Micó
Journal:	Expert Review of Medical Devices
Volume:	Accepted author version posted online: 18 Jan 2017
Doi:	10.1080/17434440.2017.1281739
Abstract	
	<p>Aim: To evaluate the repeatability of topographic measurements using an integrated Placido disk - OCT device.</p> <p>Methods: Thirty right eyes of thirty healthy subjects aged between 20 and 30 years were included. The topographic parameters of simulated keratometry, asphericity, minimum pachymetry, white-to-white distance, spherical aberration and corneal elevation were studied. Three measurements were taken by the same observer using the Visante omni device. The coefficient of repeatability (CoR), coefficient of variation (CoV) and intraclass correlation coefficient (ICC) were calculated to assess the repeatability. The Bland-Altman graphical method was also applied.</p> <p>Results: No significant differences between repeated measurements were found. The mean difference for simulated keratometry was between 0.01 and 0.02 D. For asphericity was -0.01 ± 0.02, and for minimum pachymetry, spherical aberration and WTW was equal or less than 0.02 mm. The mean differences for corneal elevation, in millimeters and diopters, were between 0.00 and 0.01. Overall, most topographic parameters had a CoV less than 0.4%, a CoR less than 0.3 and an ICC higher than 0.98.</p> <p>Conclusions: The Visante omni device provides good repeatability for topographical measurements of simulated keratometry, asphericity, pachymetry, spherical aberration and corneal elevation.</p>
Database	
	Taylor & Francis Online

Title:	Newer medical therapies for metastatic soft tissue sarcoma
Author:	Akash Tiwari, Vineet Govinda Gupta & Sameer Bakhshi
Journal:	Expert Review of Anticancer Therapy
Volume:	Accepted author version posted online: 20 Jan 2017
Doi:	10.1080/14737140.2017.1285229
Abstract	
	<p>Introduction: Metastatic/advanced soft tissue sarcoma has a poor prognosis and conventionally, treatment options have been limited. In recent years, this area has been a rich ground for research with many new drugs being approved and several more in the pipeline. With multiple new treatment options available, it is vital to keep up pace with this rapidly changing field.</p> <p>Areas covered: Recent data regarding use of novel agents in advanced soft tissue sarcoma is reviewed with a focus on clinical applicability. The goal is to guide the clinician into choosing appropriate lines of therapy for the individual patient in light of recent availability of multiple new treatment options.</p> <p>Expert Commentary: Patients with advanced soft tissue sarcoma can expect to receive several lines of therapy in the modern era. Tumor histology should ideally guide the choice of therapy. The new FDA approved second line drugs viz, trabectedin, pazopanib and eribulin should be considered first after failure of doxorubicin-based chemotherapy. Additional options have become available, such as antiangiogenic agents, mTOR inhibitors, and several new molecules targeting specific oncogenic pathways. All these agents have a role in treating soft tissue sarcoma, and careful individualization of therapy can help achieve optimal outcomes in these challenging patients.</p>
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	Taylor & Francis Online

Title:	Noninvasive assessment of altered activity following restraint in mice using an automated physiological monitoring system
Author:	Jereme G. Spiers, Hsiao-Jou Cortina Chen, Frederik J. Steyn, Nickolas A. Lavidis, Trent M. Woodruff & John D. Lee
Journal:	Stress
Volume:	Published online: 17 Jan 2017
Doi:	10.1080/10253890.2016.1276898
	Abstract
	<p>In the laboratory setting, typical endocrine and targeted behavioral tests are limited in their ability to provide a direct assessment of stress in animals housed in undisturbed conditions. We hypothesized that an automated phenotyping system would allow the detection of subtle stress-related behavioral changes well beyond the time-frames examined using conventional methods. In this study, we have utilized the TSE PhenoMaster system to continuously record basal behaviors and physiological parameters including activity, body weight, food intake and oxygen consumption in undisturbed and stressed C57Bl/6J male mice (n = 12/group), with a pharmacological intervention using the conventional anxiolytic, diazepam (5 mg kg⁻¹ i.p.; n = 8/group). We observed significant 20–30% reductions in locomotor activity in the dark phase, with subtle reductions in light phase activity for up to 96 h following a single 2 h episode of restraint stress. A single administration of diazepam reduced plasma corticosterone concentrations by 30–35% during stress exposure when compared to mice treated with vehicle. This treatment did not result in significantly different locomotor activity compared to vehicle within the first 48 h following restraint stress. However, diazepam treatment facilitated restoration of locomotor activity at 72 and 96 h after restraint stress exposure in comparison to vehicle-treated mice. Hence, the use of an automated phenotyping system allows a real time assessment of basal behaviors and empirical metabolism following exposure to restraint stress and demonstrates major and subtle changes in activity persist for several days after stress exposure.</p>
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	Taylor & Francis Online

Title:	Role of CT in the Diagnosis of Nonspecific Abdominal Pain: A Multicenter Analysis
Author:	Jonathan D. Eisenberg, et al.
Journal:	American Journal of Roentgenology
Volume:	Jan 11, 2017 (Ahead of Print)
Doi:	10.2214/AJR.16.16669
Abstract	
	<p>OBJECTIVE. The objective of our study was to determine whether specific patient and physician factors—known before CT—are associated with a diagnosis of nonspecific abdominal pain (NSAP) after CT in the emergency department (ED).</p> <p>MATERIALS AND METHODS. We analyzed data originally collected in a prospective multicenter study. In the parent study, we identified ED patients referred to CT for evaluation of abdominal pain. We surveyed their physicians before and after CT to identify changes in leading diagnoses, diagnostic confidence, and admission decisions. In the current study, we conducted a multiple regression analysis to identify whether the following were associated with a post-CT diagnosis of NSAP: patient age; patient sex; physicians' years of experience; physicians' pre-CT diagnostic confidence; and physicians' pre-CT admission decision if CT had not been available. We analyzed patients with and those without a pre-CT diagnosis of NSAP separately. For the sensitivity analysis, we excluded patients with different physicians before and after CT.</p> <p>RESULTS. In total, 544 patients were included: 10% (52/544) with a pre-CT diagnosis of NSAP and 90% (492/544) with a pre-CT diagnosis other than NSAP. The leading diagnoses changed after CT in a large proportion of patients with a pre-CT diagnosis of NSAP (38%, 20/52). In regression analysis, we found that physicians' pre-CT diagnostic confidence was inversely associated with a post-CT diagnosis of NSAP in patients with a pre-CT diagnosis other than NSAP ($p = 0.0001$). No other associations were significant in both primary and sensitivity analyses.</p> <p>CONCLUSION. With the exception of physicians' pre-CT diagnostic confidence, the factors evaluated were not associated with a post-CT diagnosis of NSAP.</p>
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	American Roentgen Ray Society

Title:	Nut consumption and risk of cardiovascular disease, total cancer, all-cause and cause-specific mortality: a systematic review and dose-response meta-analysis of prospective studies			
Author:	Dagfinn Aune, NaNa Keum, Edward Giovannucci, Lars T. Fadnes, Paolo Boffetta, Darren C. Greenwood, Serena Tonstad, Lars J. Vatten, Elio Riboli and Teresa Norat			
Journal:	BMC Medicine			
Volume:	Year 2016	Issue:	14	Page: Page 207
Doi:	DOI: 10.1186/s12916-016-0730-3			
	Abstract			
	<p>Background: Although nut consumption has been associated with a reduced risk of cardiovascular disease and all-cause mortality, data on less common causes of death has not been systematically assessed. Previous reviews missed several studies and additional studies have since been published. We therefore conducted a systematic review and meta-analysis of nut consumption and risk of cardiovascular disease, total cancer, and all-cause and cause-specific mortality.</p> <p>Methods: PubMed and Embase were searched for prospective studies of nut consumption and risk of cardiovascular disease, total cancer, and all-cause and cause-specific mortality in adult populations published up to July 19, 2016. Summary relative risks (RRs) and 95% confidence intervals (CIs) were calculated using random-effects models. The burden of mortality attributable to low nut consumption was calculated for selected regions.</p> <p>Results: Twenty studies (29 publications) were included in the meta-analysis. The summary RRs per 28 grams/day increase in nut intake was for coronary heart disease, 0.71 (95% CI: 0.63–0.80, I² = 47%, n = 11), stroke, 0.93 (95% CI: 0.83–1.05, I² = 14%, n = 11), cardiovascular disease, 0.79 (95% CI: 0.70–0.88, I² = 60%, n = 12), total cancer, 0.85 (95% CI: 0.76–0.94, I² = 42%, n = 8), all-cause mortality, 0.78 (95% CI: 0.72–0.84, I² = 66%, n = 15), and for mortality from respiratory disease, 0.48 (95% CI: 0.26–0.89, I² = 61%, n = 3), diabetes, 0.61 (95% CI: 0.43–0.88, I² = 0%, n = 4), neurodegenerative disease, 0.65 (95% CI: 0.40–1.08, I² = 5.9%, n = 3), infectious disease, 0.25 (95% CI: 0.07–0.85, I² = 54%, n = 2), and kidney disease, 0.27 (95% CI: 0.04–1.91, I² = 61%, n = 2). The results were similar for tree nuts and peanuts. If the associations are causal, an estimated 4.4 million premature deaths in the America, Europe, Southeast Asia, and Western Pacific would be attributable to a nut intake below 20 grams per day in 2013.</p> <p>Conclusions: Higher nut intake is associated with reduced risk of cardiovascular disease, total cancer and all-cause mortality, and mortality from respiratory disease, diabetes, and infections.</p>			
	Database			
	BioMed Central			

Title:	Assessment of the safety of non-fixed-dose combination of artesunate and amodiaquine for uncomplicated falciparum malaria in pregnancy: a nonrandomized open-label study
Author:	Osede Ignis Iribhogbe, Emmanuel Odion Igue and Marylove Odianosen
Journal:	Journal of Pharmaceutical Health Services Research
Volume:	Version of Record online: 19 JAN 2017
Doi:	DOI: 10.1111/jphs.12166
Abstract	
	<p>Objectives: The objectives of this study were to determine the safety of the use of non-fixed-dose combination of artesunate (AS) and amodiaquine (AQ) in the treatment of uncomplicated falciparum malaria in pregnancy. In this regard, the focus was on the possible effects of the combination on biochemical and haematological parameters as well as other adverse drug reactions associated with the use of the drugs.</p> <p>Methods: Ninety subjects were recruited from pregnant women on antenatal care visit to a busy hospital in Esan West Local Government Area, Edo State Nigeria. Fifty met the criteria for the diagnosis of uncomplicated malaria. They were placed on treatment with standard doses of AS 4 mg/kg and AQ 10 mg/kg daily for 3 days. Forty apparently healthy pregnant women and 30 nonpregnant women were used as control. Patients on AS + AQ combination were monitored closely for 28 days.</p> <p>Key findings: There was a significant reduction in high-density lipoprotein cholesterol-C: 24.60 ± 1.20 mg/dl) in the test group ($P < 0.05$) when compared with pregnant control (27.57 ± 0.89 mg/dl) and a nonsignificant reduction ($P > 0.05$) in low-density lipoprotein cholesterol-C: 83.55 ± 6.10 mg/dl) levels compared with control (87.82 ± 4.88 mg/dl). Additionally, there was a nonsignificant elevation ($P > 0.05$) of conjugated bilirubin in the test group (0.48 ± 0.06 mg/dl) when compared with pregnant control (0.40 ± 0.04 mg/dl). Changes in haemoglobin concentration (10.45 ± 0.23 g/dl) and packed cell volume ($31.37 \pm 0.70\%$) in patients treated with AS + AQ combination were not significant compared with pregnant control (10.18 ± 0.27 g/dl and $31.17 \pm 0.55\%$ respectively). Alkaline phosphatase (120.27 ± 7.81 IU/l) was not significantly elevated ($P > 0.05$) in patients treated with AS + AQ combination compared with pregnant control (117.81 ± 10.61 IU/l).</p> <p>Conclusion: We conclude that the use of this combination is safe and well tolerated in pregnant women with uncomplicated falciparum malaria.</p>
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	Wiley Online Library

Title:	A literacy-sensitive approach to improving antibiotic understanding in a community-based setting
Author:	Crystal M. David, Katherine S. O'Neal, Michael J. Miller, Jeremy L. Johnson and Ann E. Lloyd
Journal:	International Journal of Pharmacy Practice
Volume:	Version of Record online: 18 JAN 2017
Doi:	DOI: 10.1111/ijpp.12332
Abstract	
	<p>Objective</p> <p>Antibiotic misuse contributes to antibiotic-resistant bacterial infections. Patient and prescriber knowledge and behaviors influence antibiotic use. Past research has focused on describing and influencing prescriber behavior with less attention to the patient role in antibiotic use. This study seeks to: (1) develop and deploy a program to enhance patient knowledge about antibiotic use; (2) evaluate whether providing patient education is associated with improvements in antibiotic knowledge in a community-based sample; and (3) explore whether health literacy may be associated with knowledge of appropriate antibiotic use.</p> <p>Method</p> <p>This study developed, deployed, and evaluated whether community-based educational seminars enhance patient knowledge about antibiotic use.</p> <p>Key findings</p> <p>Twenty-eight participants from five locations completed the seminar. The antibiotic knowledge index score significantly increased by 2.0 points on the 14 point knowledge index from 10.95 (± 2.88) to 12.95 (± 1.72) ($P = 0.0011$) for the 19 participants completing both the pre and post-test.</p> <p>Conclusion</p> <p>A community-based educational seminar on appropriate antibiotic use can effectively increase patient understanding of their role in antibiotic stewardship and combat the inappropriate use of antibiotics.</p>
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Title:	Mapping the intermediate digestion phases of human healthy intestinal contents from distal ileum and caecum at fasted and fed state conditions
Author:	Thuy Tran, Dimitrios G. Fatouros, Maria Vertzoni, Christos Reppas and Anette Müllertz
Journal:	Journal of Pharmacy and Pharmacology
Volume:	Version of Record online: 20 JAN 2017
Doi:	DOI: 10.1111/jphp.12686
	Abstract
	<p>Objectives</p> <p>To investigate at the ultrastructural level, the colloidal phases formed in the lumen of the distal ileum and caecum of healthy adults.</p> <p>Methods</p> <p>Cryogenic transmission electron microscopy (Cryo-TEM) was employed to image the intermediate colloidal phases of human intestinal contents collected from distal ileum and caecum of two healthy volunteers under fasted and fed state conditions.</p> <p>Key findings</p> <p>In samples collected both in the fasted and fed states, Cryo-TEM study revealed the presence of large spherical unilamellar and occasionally bi-lamellar and oligolamellar vesicles with diameters ranging from 50 to 200 nm for both volunteers in distal ileum and caecum. Bilayer fragments were frequently observed in caecal samples. Plate-like structures resembling the morphology of cholesterol plates were visualised in all samples. Elongated structures were observed in the fed state in distal ileum and caecum for both volunteers, whereas no micellar structures could be detected for all samples.</p> <p>Conclusions</p> <p>This study provides a framework for understanding the structure of colloidal phases, and it may assist in elucidating the role of dosing conditions on drug absorption from the distal ileum and caecum.</p>
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Title:	Modulation of the Tumor-Related Kv10.1 Channel by Mibefradil
Author:	Froylán Gómez-Lagunas, Elisa Carrillo, Luis A. Pardo and Walter Stühmer
Journal:	Journal of Cellular Physiology
Volume:	Version of Record online: 11 JAN 2017
Doi:	DOI: 10.1002/jcp.25448
	Abstract
	<p>Several reports credit mibefradil with tumor suppressing properties arising from its known inhibition of Ca²⁺ currents. Given that mibefradil (Mb) is also known to inhibit K⁺ channels, we decided to study the interaction between this organic compound and the tumor-related Kv10.1 channel. Here we report that Mb modulates the gating of Kv10.1. Mb induces an apparent inactivation from both open and early closed states where the channels dwell at hyperpolarized potentials. Additionally, Mb accelerates the kinetics of current activation, in a manner that depends on initial conditions. Our observations suggest that Mb binds to the voltage sensor domain of Kv10.1 channels, thereby modifying the gating of the channels in a way that in some, but not all, aspects opposes to the gating effects exerted by divalent cations.</p>
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Title:	Inhibitory Effect of Blue Light Emitting Diode on Migration and Invasion of Cancer Cells
Author:	Phil-Sun Oh, Hyun-Soo Kim, Eun-Mi Kim, Hyosook Hwang, Hyang Hwa Ryu, SeokTae Lim, Myung-Hee Sohn and Hwan-Jeong Jeong
Journal:	Journal of Cellular Physiology
Volume:	Accepted manuscript online: 18 JAN 2017
Doi:	10.1002/jcp.25805
	Abstract
	<p>The aim of this study was to determine the effects and molecular mechanism of blue light emitting diode (LED) in tumor cells. A migration and invasion assay for the metastatic behavior of mouse colon cancer CT-26 and human fibrosarcoma HT-1080 cells was performed. Cancer cell migration-related proteins were identified by obtaining a 2-dimensional gel electrophoresis (2-DE) in total cellular protein profile of blue LED-irradiated cancer cells, followed by matrix-assisted laser desorption/ionization-time of flight (MALDI-TOF) analysis of proteins. Protein levels were examined by immunoblotting. Irradiation with blue LED inhibited CT-26 and HT-1080 cell migration and invasion. The anti-metastatic effects of blue LED irradiation were associated with inhibition of matrix metalloproteinase (MMP)-2 and MMP-9 expression. P38 MAPK phosphorylation was increased in blue LED-irradiated CT-26 and HT-1080 cells, but was inhibited after pretreatment with SB203580, a specific inhibitor of p38 MAPK. Inhibition of p38 MAPK phosphorylation by SB203580 treatment increased number of migratory cancer cells in CT-26 and HT-1080 cells, indicating that blue LED irradiation inhibited cancer cell migration via phosphorylation of p38 MAPK. Additionally blue LED irradiation of mice injected with CT-26 cells expressing luciferase decreased early stage lung metastasis compared to untreated control mice. These results indicate that blue LED irradiation inhibits cancer cell migration and invasion in vitro and in vivo. This article is protected by copyright. All rights reserved</p>
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