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C. Russo, L. Wyld, M. Da Costa Aubreu, C. S. Bury, C. Heaton, L. M. Cole and S. Francese (2023) **Non-invasive screening of breast cancer from fingertip smears—a proof of concept study** *Scientific Reports (Nature Publisher Group)* 13(1) p.1868

**Abstract**: Breast cancer is a global health issue affecting 2.3 million women per year, causing death in over 600,000. Mammography (and biopsy) is the gold standard for screening and diagnosis. Whilst effective, this test exposes individuals to radiation, has limitations to its sensitivity and specificity and may cause moderate to severe discomfort. Some women may also find this test culturally unacceptable. This proof-of-concept study, combining bottom-up proteomics with Matrix Assisted Laser Desorption Ionisation Mass Spectrometry (MALDI MS) detection, explores the potential for a non-invasive technique for the early detection of breast cancer from fingertip smears. A cohort of 15 women with either benign breast disease (n&thinsp;=&thinsp;5), early breast cancer (n&thinsp;=&thinsp;5) or metastatic breast cancer (n&thinsp;=&thinsp;5) were recruited from a single UK breast unit. Fingertips smears were taken from each patient and from each of the ten digits, either at the time of diagnosis or, for metastatic patients, during active treatment. A number of statistical analyses and machine learning approaches were investigated and applied to the resulting mass spectral dataset. The highest performing predictive method, a 3-class Multilayer Perceptron neural network, yielded an accuracy score of 97.8% when categorising unseen MALDI MS spectra as either the benign, early or metastatic cancer classes. These findings support the need for further research into the use of sweat deposits (in the form of fingertip smears or fingerprints) for non-invasive screening of breast cancer.

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W. U. R. Ahmed, S. Bhatia, K. A. McLean,….., W. Fradley, (2022) **Validation of the OAKS prognostic model for acute kidney injury after gastrointestinal surgery** *BJS Open* 6(1) p.zrab150

**Abstract**: Background: Postoperative acute kidney injury (AKI) is a common complication of major gastrointestinal surgery with an impact on short- and long-term survival. No validated system for risk stratification exists for this patient group. This study aimed to validate externally a prognostic model for AKI after major gastrointestinal surgery in two multicentre cohort studies. Method(s): The Outcomes After Kidney injury in Surgery (OAKS) prognostic model was developed to predict risk of AKI in the 7 days after surgery using six routine datapoints (age, sex, ASA grade, preoperative estimated glomerular filtration rate, planned open surgery and preoperative use of either an angiotensin-converting enzyme inhibitor or an angiotensin receptor blocker). Validation was performed within two independent cohorts: a prospective multicentre, international study ('IMAGINE') of patients undergoing elective colorectal surgery (2018); and a retrospective regional cohort study ('Tayside') in major abdominal surgery (2011-2015). Multivariable logistic regression was used to predict risk of AKI, with multiple imputation used to account for data missing at random. Prognostic accuracy was assessed for patients at high risk (greater than 20 per cent) of postoperative AKI. Result(s): In the validation cohorts, 12.9 per cent of patients (661 of 5106) in IMAGINE and 14.7 per cent (106 of 719 patients) in Tayside developed 7-day postoperative AKI. Using the OAKS model, 558 patients (9.6 per cent) were classified as high risk. Less than 10 per cent of patients classified as low-risk developed AKI in either cohort (negative predictive value greater than 0.9). Upon external validation, the OAKS model retained an area under the receiver operating characteristic (AUC) curve of range 0.655-0.681 (Tayside 95 per cent c.i. 0.596 to 0.714; IMAGINE 95 per cent c.i. 0.659 to 0.703), sensitivity values range 0.323-0.352 (IMAGINE 95 per cent c.i. 0.281 to 0.368; Tayside 95 per cent c.i. 0.253 to 0.461), and specificity range 0.881-0.890 (Tayside 95 per cent c.i. 0.853 to 0.905; IMAGINE 95 per cent c.i. 0.881 to 0.899). Conclusion(s): The OAKS prognostic model can identify patients who are not at high risk of postoperative AKI after gastrointestinal surgery with high specificity.Copyright © The Author(s) 2022. Published by Oxford University Press on behalf of BJS Society Ltd.

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R. Harries, S. O'Connell, L. Knight,…..T. Wilson, ….. D. Beral, J. Osborne, R. Pugh, G. Herdman, R. George, (2022) **Incisional hernia following colorectal cancer surgery according to suture technique: Hughes Abdominal Repair Randomized Trial (HART)** *British Journal of Surgery* 109(10) p.943-950

**Abstract**: Background: Incisional hernias cause morbidity and may require further surgery. HART (Hughes Abdominal Repair Trial) assessed the effect of an alternative suture method on the incidence of incisional hernia following colorectal cancer surgery. Method(s): A pragmatic multicentre single-blind RCT allocated patients undergoing midline incision for colorectal cancer to either Hughes closure (double far-near-near-far sutures of 1 nylon suture at 2-cm intervals along the fascia combined with conventional mass closure) or the surgeon's standard closure. The primary outcome was the incidence of incisional hernia at 1 year assessed by clinical examination. An intention-to-treat analysis was performed. Result(s): Between August 2014 and February 2018, 802 patients were randomized to either Hughes closure (401) or the standard mass closure group (401). At 1 year after surgery, 672 patients (83.7 per cent) were included in the primary outcome analysis; 50 of 339 patients (14.8 per cent) in the Hughes group and 57 of 333 (17.1 per cent) in the standard closure group had incisional hernia (OR 0.84, 95 per cent c.i. 0.55 to 1.27; P = 0.402). At 2 years, 78 patients (28.7 per cent) in the Hughes repair group and 84 (31.8 per cent) in the standard closure group had incisional hernia (OR 0.86, 0.59 to 1.25; P = 0.429). Adverse events were similar in the two groups, apart from the rate of surgical-site infection, which was higher in the Hughes group (13.2 versus 7.7 per cent; OR 1.82, 1.14 to 2.91; P = 0.011). Conclusion(s): The incidence of incisional hernia after colorectal cancer surgery is high. There was no statistical difference in incidence between Hughes closure and mass closure at 1 or 2 years.Copyright © 2022 The Author(s).

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F. Rashid, A. Mahmood, D. H. Hawkes, W. J. Harrison, M. Mohamed, F. Gillani, G. Wilson, J. McEvoy, R. Mohan, D. Samy, A. Arora, A. S. Dhadwal, N. Patel, J. J. S. Ong, H. M. Umer, A. Paramsivan, A. Adamczyk, J. Edwin, R. McAllister, S. D. Gandhi, A. Abusido, M. A. Bashir, E. Armstrong, N. Mamoowala, H. Crouch-Smith, M. Khattak, H. Benjamin-Laing, T. A. Tarrar, A. A. Bua, R. Tahoun, X. N. Lee, T. A. Syed, M. Nafea, W. S. Khan, A. Bharadwaj, S. Tsui, I. A. Ali, H. Elbana, A. Hagnasir, U. Ahmad, Z. Ahmad, B. Hanratty and B. Yawar (2022) **Coronavirus in hip fractures (CHIP) 4 has vaccination improved mortality outcomes in hip fracture patients?** *Bone and Joint Journal* 104-B(12) p.1362-1368

**Abstract**: Aims Prior to the availability of vaccines, mortality for hip fracture patients with concomitant COVID-19 infection was three times higher than pre-pandemic rates. The primary aim of this study was to determine the 30-day mortality rate of hip fracture patients in the post-vaccine era. Methods A multicentre observational study was carried out at 19 NHS Trusts in England. The study period for the data collection was 1 February 2021 until 28 February 2022, with mortality tracing until 28 march 2022. Data collection included demographic details, data points to calculate the Nottingham Hip Fracture Score, COVID-19 status, 30-day mortality, and vaccination status. Results A total of 337 patients tested positive for COVID-19. The overall 30-day mortality in these patients was 7.7%: 5.5% in vaccinated patients and 21.7% in unvaccinated patients. There was no significant difference between post-vaccine mortality compared with pre-pandemic 2019 controls (7.7% vs 5.0%; p = 0.068). Independent risk factors for mortality included unvaccinated status, Abbreviated Mental Test Score <= 6, male sex, age > 80 years, and time to theatre > 36 hours, in decreasing order of effect size. Conclusion The vaccination programme has reduced 30-day mortality rates in hip fracture patients with concomitant COVID-19 infection to a level similar to pre-pandemic. Mortality for unvaccinated patients remained high.Copyright © 2022 The British Editorial Society of Bone & Joint Surgery.

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G. Vlachopanos, M. El Kossi, D. Aziz and A. Halawa (2022) **Association of Nephrectomy of the Failed Renal Allograft With Outcome of the Future Transplant: A Systematic Review** *Experimental and Clinical Transplantation* 20(1) p.1-11

**Abstract**: Kidney allograft failure is a significant complication in kidney transplant recipients, and the surgical decision to perform allograft nephrectomy poses a strong dilemma because it is associated with significant morbidity and mortality. There is a debate over the effect of allograft nephrectomy on the development of allosensitization and the impact on potential retransplantation. Moreover, the use of immunosuppression may contribute to antibody allosensitization as allograft nephrectomy and immunosuppression act jointly and interdependently toward antibody formation. Because more and more patients with kidney allograft failure are entering wait lists for repeat transplant procedures, a review of available evidence on the field is required. Here, we performed a literature search using multiple medical databases to identify relevant studies that assessed the effects of allograft nephrectomy on important retransplant endpoints such as allograft and patient survival; furthermore, secondary outcomes such as alloantibody sensitization were also evaluated. A total of 15 studies were identified; all were retrospective, single-center studies. The rate of allograft nephrectomy in patients with retransplant varied widely (from 20% to 80%). The average allograft nephrectomy rate in included studies was 43% (allograft nephrectomy number/number of repeat transplantations: 2351/5431). Most studies did not observe an allograft survival benefit after retransplant for patients with allograft nephrectomy with the exception of 4 studies that found worse allograft survival after allograft nephrectomy. Interestingly, 1 study found that, in the patient subgroup with early kidney allograft failure (<12 months posttransplant), allograft nephrectomy may be associated with better allograft survival. Available data suggested that allograft nephrectomy may be associated with a higher risk of increasing anti-HLA antibody levels. The quality of the included studies suffered from nonrandomized design, potential confounding, and small sample size. To conclude, further randomized controlled trials are required to delineate the role of allograft nephrectomy on retransplant outcomes.Copyright © Baskent University 2022 Printed in Turkey. All Rights Reserved.

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M. Tayyab H. Siddiqui, K. M. Inam Pal, Fatima Shaukat, Aliza Fatima, K. M. Babar Pal, Jibran Abbasy and Noman Shazad (2022) **Gastro-intestinal stromal tumor (GIST): Experience from a tertiary care center in a low resource country** *Turkish journal of surgery* 38(4) p.362-367

**Abstract**: Objectives: The aim of this retrospective study was to review the overall survival (OS) and disease-free survival (DFS) of GISTs treated surgically at our center over the past decade., Material and Methods: We undertook a 12-year retrospective review of our experience in treating this condition with a focus on long-term outcomes of treated patients in a resource-constrained environment. Incomplete follow-up information continues to be a major problem with studies conducted in low resource settings, and in order to overcome this, we undertook telephonic contact with patients or their relatives to get the necessary information about their clinical status., Results: Fifty-seven patients with GIST underwent surgical resection during this period of time. The stomach was the most common organ involved in the disease, with 74% of the patients. Surgical resection was the main treatment approach, with R0 resection possible in 88%. Nine percent of the patients were given Imatinib as neoadjuvant treatment and 61% were offered the same, as adjuvant therapy. The duration of adjuvant treatment changed from one year to three years over the study period. Pathological risk assessment categorized the patients as Stage I, 33%; Stage II, 19%; Stage III, 39%; and Stage IV, 9%. Of the 40 patients who were at least three years from surgery, 35 were traceable giving an 87.5%, overall three-year survival. Thirty-one patients (77.5%) were confirmed to be disease-free at three years., Conclusion: This is the first report of mid-long-term outcomes of the multimodality treatment of GIST from Pakistan. Upfront surgery continues to be the main modality. OS & DFS in resource-poor environments can be similar to those seen in a better-structured healthcare setting. Copyright .. 2022, Turkish Surgical Society.

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Sirhan Alvi and Pooja Harsha (2022) **Flexible Nasopharyngoscopy**

**StatPearls
Abstract**: Flexible nasopharyngoscopy (also called fiberoptic nasendoscopy/flexible nasolaryngoscopy/flexible fiberoptic nasopharyngolaryngoscopy) is an essential skill for any otorhinolaryngologist (ENT surgeon). It is a diagnostic procedure used for examination of the nose, throat, and airway. Fiberoptic imaging became prominent in the 1950s due to the innovations of Hopkins and Stortz. The first medically functioning fiberoptic scope was designed in 1963 by Hirschowitz. Copyright © 2022, StatPearls Publishing LLC.

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T. Cleveland (2023) **Commentary on: Carotid Endarterectomy or Stenting or Best Medical Treatment Alone for Moderate-to-Severe Asymptomatic Carotid Artery Stenosis: 5-Year Results of a Multicentre, Randomised Controlled Trial** *CardioVascular and Interventional Radiology* 46(2) p.299-300

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J. R. Griffiths, I. Cazzoli, S. Ailoaei, S. Guarguagli, V. Nagarajan, A. Kempny and S. Ernst (2023) **Non-invasive electrocardiographic mapping on the ward to guide ablation of premature ventricular contractions** *Journal of Electrocardiology* 78(p.65-68

**Abstract**: Premature ventricular contracts (PVCs) are commonly encountered in clinical practice, but their ablation can prove difficult. In 15 patients with idiopathic PVCs, non-invasive mapping system View Into Ventricular Onset TM (VIVO) in combination with 12-lead Holter monitoring on the ward accurately guided catheter ablation via the creation of 'electrical roadmaps' of ventricular activation. This allowed for better discussions of risks and benefits with the patient prior to the procedure, and is likely to have particular advantages for patients with a low PVC burden, multiple morphologies, or difficult to reach origins. Clinical perspective: PERSONALISED APPROACH: A novel non-invasive mapping tool in combination with technology, such as 12 lead Holter monitoring, allows for individualised, accurate prediction of PVC origin outside the electrophysiology (EP) lab. Non-invasive mapping: An "electrical road map" can be implemented into 3D electroanatomical mapping systems, shortening procedure times and resulting in excellent clinical outcomes. Potential benefits: VIVO could be used to improve catheter ablation outcomes for patients with infrequent PVCs, multiple morphologies and/or difficult to reach origins.Copyright © 2023 The Authors

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Mohammad Abu-Ain, Raed Shatnawi, Ibrahim Shehadeh and Mohammad Irfan Khan (2023) **Long-Term Visual Acuity and Optical Coherence Tomography Changes After Vitrectomy for Idiopathic Epiretinal Membranes** *Clinical ophthalmology (Auckland, N.Z.)* 17(p.693-700

**Abstract**: Objective: To evaluate the long-term visual acuity and retinal thickness changes after pars plana vitrectomy (PPV) for idiopathic epiretinal membranes (ERM)., Methods: We performed a retrospective analysis of 72 patients who underwent PPV for idiopathic ERM in a tertiary hospital over 5 consecutive years. The main outcome measurement was change in visual acuity and macular thickness as recorded with optical coherence tomography (OCT)., Results: Medical records of 239 patients with a diagnosis of ERM who underwent PPV with or without internal limiting membrane (ILM) peeling were reviewed; of these, 72 patients with idiopathic ERM were included in the final analysis. All patients completed at least one year of follow-up, and 23 patients (30%) had 5 or more years of follow-up. The mean preoperative best corrected visual acuity (BCVA) was 20/65, and mean preoperative central macular thickness (CMT) on OCT was 434 microns (..m). Mean postoperative BCVA and CMT at one year were 20/40 and 303 ..m, respectively (p<0.0001). A total of 42 patients (58%) improved by 2 or more lines; BCVA and CMT continued to improve postoperatively for up to 5 years of the follow-up period. There was no significant difference in BCVA or CMT between phakic and pseudophakic patients, and ILM peeling was performed in 67% of patients. Improved BCVA at 1 year was associated with younger age (p<0.0001) and ILM peeling (p=0.020)., Conclusion: PPV is an effective treatment for idiopathic ERM, and ILM peel may be of benefit. BCVA continues to improve up to 2 years and beyond after surgery regardless of the duration of symptoms. Copyright .. 2023 Abu-Ain et al.

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G. Carreno-Tarragona, A. Alvarez-Larran, C. N. Harrison, J. C. Martinez-Avila, J. C. Hernandez-Boluda, F. Ferrer-Marin, D. H. Radia, E. Mora Castera, S. Francis, T. Gonzalez-Martinez, K. Goddard, M. Perez-Encinas, S. Narayanan, J. M. Raya, V. Singh, P. Toth, X. Gutierrez, P. Amat Martinez, L. McIlwaine, M. Alobaidi, K. Mayani, A. McGregor, R. Stuckey, B. Psaila, A. Segura, C. L. Alvares, K. Davidson, S. Osorio, R. Cutting, C. P. Sweeney, L. Rufian, L. Moreno, I. Cuenca, J. Smith, M. L. Morales, R. Gil-Manso, I. Koutsavlis, L. Wang, A. J. Mead, M. Rozman, J. Martinez-Lopez, R. Ayala and N. C. Cross (2022) **CNL and aCML should be considered as single entity based on molecular profiles and outcomes** *Blood advances* **Abstract**: Chronic neutrophilic leukemia (CNL) and atypical chronic myeloid leukemia (aCML) are rare myeloid disorders that are challenging with regard to diagnosis and clinical management. To study the similarities and differences of these disorders we undertook a multi-center international study of one of the largest case series (CNL, n=24; aCML, n=37 cases, respectively), focusing on the clinical and mutational profiles (n=53 with molecular data) of these diseases. We found no differences in clinical presentation or outcomes between both entities. As previously described, both CNL and aCML share a complex mutational profile with mutations in genes involved in epigenetic regulation, splicing and signaling pathways. Apart from CSF3R, only EZH2 and TET2 were differentially mutated between them. The molecular profiles support the notion of CNL and aCML being a continuum of the same disease that may fit best within the myelodysplastic/myeloproliferative neoplasms (MDS/MPN). We identified four high-risk mutated genes, specifically CEBPA (beta=2.26, HR=9.54, p=0.003), EZH2 (beta=1.12, HR=3.062, p=0.009), NRAS (beta=1.29, HR=3.63, p=0.048) and U2AF1 (beta=1.75, HR=5.74, p=0.013) by multivariate analysis. Our findings underscore the relevance of molecular-risk classification in CNL/aCML as well as the importance of CSF3R mutations in these diseases.Copyright © 2022 American Society of Hematology.

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M. Zuluaga Quintero, B. S. H. Indrasena, L. Fox, P. Subedi and J. Aylott (2022) **Upstreamist leaders: how risk factors for unscheduled return visits (URV) to the emergency department can inform integrated healthcare** *Leadership in health services (Bradford, England)* ahead-of-print(aheadofprint) **Abstract**: PURPOSE: This paper aims to report on research undertaken in an National Health Service (NHS) emergency department in the north of England, UK, to identify which patients, with which clinical conditions are returning to the emergency department with an unscheduled return visit (URV) within seven days. This paper analyses the data in relation to the newly introduced Integrated Care Boards (ICBs). The continued upward increase in demand for emergency care services requires a new type of "upstreamist", health system leader from the emergency department, who can report on URV data to influence the development of integrated care services to reduce further demand on the emergency department. DESIGN/METHODOLOGY/APPROACH: Patients were identified through the emergency department symphony data base and included patients with at least one return visit to emergency department (ED) within seven days. A sample of 1,000 index visits between 1 January 2019-31 October 2019 was chosen by simple random sampling technique through Excel. Out of 1,000, only 761 entries had complete data in all variables. A statistical analysis was undertaken using Poisson regression using NCSS statistical software. A review of the literature on integrated health care and its relationship with health systems leadership was undertaken to conceptualise a new type of "upstreamist" system leadership to advance the integration of health care. FINDINGS: Out of all 83 variables regressed with statistical analysis, only 12 variables were statistically significant on multi-variable regression. The most statistically important factor were patients presenting with gynaecological disorders, whose relative rate ratio (RR) for early-URV was 43% holding the other variables constant. Eye problems were also statistically highly significant (RR = 41%) however, clinically both accounted for just 1% and 2% of the URV, respectively. The URV data combined with "upstreamist" system leadership from the ED is required as a critical mechanism to identify gaps and inform a rationale for integrated care models to lessen further demand on emergency services in the ED. RESEARCH LIMITATIONS/IMPLICATIONS: At a time of significant pressure for emergency departments, there needs to be a move towards more collaborative health system leadership with support from statistical analyses of the URV rate, which will continue to provide critical information to influence the development of integrated health and care services. This study identifies areas for further research, particularly for mixed methods studies to ascertain why patients with specific complaints return to the emergency department and if alternative pathways could be developed. The success of the Esther model in Sweden gives hope that patient-centred service development could create meaningful integrated health and care services. PRACTICAL IMPLICATIONS: This research was a large-scale quantitative study drawing upon data from one hospital in the UK to identify risk factors for URV. This quality metric can generate important data to inform the development of integrated health and care services. Further research is required to review URV data for the whole of the NHS and with the new Integrated Health and Care Boards, there is a new impetus to push for this metric to provide robust data to prioritise the need to develop integrated services where there are gaps. ORIGINALITY/VALUE: To the best of the authors' knowledge, this is the first large-scale study of its kind to generate whole hospital data on risk factors for URVs to the emergency department. The URV is an important global quality metric and will continue to generate important data on those patients with specific complaints who return back to the emergency department. This is a critical time for the NHS and at the same time an important opportunity to develop "Esther" patient-centred approaches in the design of integrated health and care services.Copyright © Emerald Publishing Limited.

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