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Posters



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Evaluation of Cepheid Xpert-Carba-R assay for the detection of carbapenemase-producing organisms

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Background & Aim: Infections with carbapenem resistant microorganisms are associated with a high morbidity and mortality. Carbapenem resistance makes empirical and targeted treatment of infections challenging. Carbapenem resistance can arise by several mechanisms with the greatest emphasis on those bacteria that have acquired transferable carbapenemase genes such as *KPC*, *OXA 48*, *IMP-1*, *VIM* and *NDM*. The goal of this study was to compare the performance of the Cepheid Xpert-Carba-R assay to modify Hodge test (MHT) and carbapenem inactivation method (CIM).

Method: MHT, CIM and Carba-R were performed on a panel of 24 isolates that included *Acinetobacter baumannii* (7), *Klebsiella pneumoniae* (9), *Klebsiella oxytoca* (1) *Citrobacter freundii* (1), *E. coli* (3), *Morganella morganii* (1) and *Pseudomonas aeruginosa* (2) as well as 18 carbapenem resistant organisms isolated from patients at Hartford Hospital [*E. coli* (11), *K. oxytoca* (3), *K. pneumoniae* (7), *P. aeruginosa* (1) and *Serratia marcescens* (1)]. Antimicrobial susceptibility of the panel isolates revealed that all except for one *A. baumannii*, one *E. coli* and one *K. pneumoniae* were resistant or intermediate to one or more carbapenems. Similarly, antimicrobial susceptibility of the clinical isolates revealed that all isolates were resistant or intermediate to one or more carbapenems except for *S. marcescens*.

Results: Of the 42 isolates, 21 isolates tested negative and 15 isolates tested positive for carbapenemase by all three tests. Two isolates (*Acinetobacter baumannii*) tested were positive by MHT, negative by CIM and CarbaR PCR and; one isolate (*Pseudomonas aeruginosa*) was tested positive by CIM, negative by MHT and CarbaR PCR. One isolate (*Acinetobacter baumannii*) tested positive by MHT and CIM, tested negative by CarbaR PCR and; one isolate (*Acinetobacter baumannii*) tested positive by CarbaR PCR (NDM) and MHT tested negative by CIM. One isolate (*Klebsiella oxytoca*) tested positive by CarbaR (NDM), tested negative by MHT and CIM. This was considered as a true positive missed by MHT and CIM.

Conclusions: CarbaR detected all isolates with *KPC*, *OXA 48*, *IMP-1*, *VIM* and *NDM* carbapenemases. Both MHT and CIM were associated with false positive and false negative results. The turn-around time for CarbaR was less than 90 minutes compared to 24 hours for MHT and CIM.

Biography

Jaber Aslanzadeh has completed his PhD at American Board of Medical Microbiology (ABMM). He is the Director of Clinical Microbiology at Hartford Hospital, USA. Currently, he is an Associate Professor of Laboratory Medicine at University of Connecticut School of Medicine, Farmington, USA.

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Immunoexpression of progesterone receptor, epithelial growth factor receptor and galectin-3 in uterine smooth muscle tumors

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Background: Uterine smooth muscle tumors constitute a spectrum of neoplasms. Usually diagnosis of leiomyomas (LMs) is straight forwards; however, atypical leiomyomas (ALMs), and smooth muscle tumors of uncertain malignant potential (STUMPs) have overlapping features and need to be distinguished from leiomyosarcoma.

Aim: Aim of this study is to evaluate progesterone receptor (PR), epithelial growth factor receptor (EGF-R) and galectin-3 expression in LMs, ALMs, STUMPs, and leiomyosarcoma and to assess their possible role in differentiating those tumors.

Materials & Method: Immunoexpression of EGF-R, PR and galectin-3 were studied in 44 cases of uterine smooth muscle tumors. Tissue samples from 20 LMs, 9 ALMs, 5 STUMP and 10 leiomyosarcoma cases were studied. Semi-quantitative score was used to evaluate immunohistochemical staining.

Results: EGF-R overexpression was detected in leiomyosarcoma compared to lack of or reduced EGF-R expression in the non-sarcomatous group (LMs, ALMs and STUMPs) with a highly significant difference ($p < 0.001$). On the contrary, there was weak or negative PR staining in leiomyosarcoma as compared to intense PR expression in the non-sarcomatous group with a highly significant difference ($p < 0.001$). Regarding galectin-3, it was down-regulated in leiomyosarcoma compared to the non-sarcomatous group with a significant difference ($p < 0.01$). Correlation analysis revealed negative correlation between EGF-R and PR expression with significant statistical results. While correlation of galectin-3 with EGF-R and PR showed insignificant statistical results.

Conclusion: Immunoexpression of EGF-R, PR and galectin-3 could help in differentiating challenging cases of uterine smooth muscle tumors. Further studies are recommended to investigate interactions between EGF-R, PR and galectin-3 and to plan new therapeutic strategies.

Biography

Maha K Eldosouky is a pathologist in Faculty of Medicine at the Taibah University, KSA, Egypt and she is working at the Department of Anatomy, Faculty of Medicine, Alminia University, Egypt. She is having more than 10 publications in reputed journals.

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Canine insulinoma: A Case Report

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Insulinomas or beta cell tumors, are pancreatic insulin-secreting neoplasias which are rarely diagnosed in dogs. However, it is recognized to be the most common islet of Langerhans cell tumors in dogs. Although cases have been reported in younger dogs, insulinoma occurs most frequently in middle aged to older dogs with an average age of nine years³. An 11-year-old male Poodle was presented to the Veterinary Hospital in São João da Boa Vista, SP, Brazil with polyphagia, history of rapid weight gain in the last six months, episodic weakness, cyanotic mucous membranes and convulsions after exercise. Serum chemistry performed showed sustained marked hypoglycemia (41-30 mg/dL). A complete blood count and serum biochemistry profile were within reference ranges. An abdominal ultrasound and radiographs examination showed no significant changes. The patient showed epilepticus status throughout internment. Hyperglycaemic therapy was unsuccessful and after eleven days of treatment, the owners decided for euthanasia. Necropsy revealed mildly enlarged pancreas with 3 individual, hard, roughly round white masses of about 0,5 cm in diameter. All tissues were submitted for routine histopathologic examination that reveals monomorphic polygonal cells, typical of neuroendocrine packeting. Cells have moderate amounts of finely granular eosinophilic cytoplasm, basilar or centrally located round nuclei, clumped chromatin, and a single prominent nucleolus. Neoplastic beta cells secrete insulin independent of blood glucose concentration, resulting in persistent and unregulated hypoglycemia. As a consequence, hypoglycemia of the central nervous system leads to the clinical signs of seizure and coma.

Biography

Otavio Monteiro is Brazilian born 25 year old Veterinary Medicine student currently coursing his fifth semester at UNIFEOB School of Veterinary Medicine in São João da Boa Vista SP, Brazil. After concluding his high school in Philadelphia, PA returned to Brazil to initiate his studies in the veterinary branch. He has previously published case reports and retrospective studies in the pathology area, and is now working on his first scientific initiation.

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Pigmented skin lesion, clinicohistopathological correlation: A hospital based study at BPKIHS

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Background: Pigmented skin lesions include both melanocytic as well as non-melanocytic lesions. Pigmentation is not just a cosmetic deformity but can also reflect underlying pathology, as nevi and other benign pigmented lesions which are important precursor of malignant melanoma.

Aim: The aim of this study was to evaluate the spectrum of clinicohistopathological and clinicoepidemiological profile of pigmented skin lesions at BPKIHS.

Materials & Methods: A total of 46 biopsies diagnosed clinically and/or confirmed by histopathology were studied spanning over a period of one year.

Results: Among the total cases studied histopathologically, 36 cases (78.3%) were benign whereas 10 cases (21.7%) were malignant. The 36 benign cases comprised of benign melanocytic nevi (27), seborrheic keratosis (5), angiokeratoma (1), sebaceous hyperplasia (1), trichoepithelioma (1), and venous hemangioma (1). Malignant cases included malignant melanoma (5) and pigmented BCC (5). In this study, an analysis of the clinical diagnosis with the histopathological diagnosis revealed a positive correlation in 26 cases (56.5%) and negative correlation in 20 cases (43.5%).

Conclusion: Most of the pigmented skin lesions are of melanocytic lesion (69.6%). Majority of the pigmented skin lesions are benign, with benign melanocytic nevi being the commonest (41.30%). Nonmelanocytic pigmented skin lesions comprised of 30.4% of cases.

Biography

Punam Paudyal completed her MD in Pathology at B.P. Koirala Institute of Health Sciences, Dharan, Nepal. She is working at the same institute as an Associate Professor and has published six papers as an author and 11 papers as a co-author in an indexed journal of Nepal.

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Importance of sputum cytopathology and Acid-Fast bacilli smears in diagnosis of lung tuberculosis and other lesions

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Tuberculosis (TB) and lung cancer remain important causes of death worldwide. The incidence of TB in Iraq is 56 per 100000 populations per year with 25 out of the 56 being infectious cases. Sputum cytological examination followed by sputum smears for acid-fast bacilli (AFB) are useful ways for identifying and diagnosis tuberculosis and other pulmonary associated lesions. The purpose of this study was to investigate the importance of sputum cytology and smears for AFB in diagnosis of TB in patients living in Erbil, Kurdistan, Iraq. A total of 95 patients with signs and symptoms suspected of pulmonary tuberculosis were included in this study. Results showed that age of the patients included in this study ranged from 11 to 92 years and they were 64% males. 50% of sputum smears were positive for acid-fast bacilli (AFB) and 61% were suggestive positive for tuberculosis by sputum cytological examination. The results of cytological investigation showed that 78% had predominantly chronic inflammatory cells, 22% had mixed inflammatory cells, 24% of the patients had metaplastic squamous cells, 43% showed necrotic background and 7% had red blood cells. On the other hand, only 1% of the cases had dysplastic cells (pre-malignant cells) and none of the smears showed granulomatous, giant or malignant cells. It was concluded that sputum cytological examinations followed by sputum smears for AFB are useful ways for diagnosis TB. It is recommended that using the combination of sputum smears for acid-fast bacilli (AFB) and sputum cytological examination resulted in a significantly increased positivity rate in diagnosis of lung lesions.

Biography

Rafal Abdulrazaq Al-Rawi has completed his MBChB in 1999 and FIC in 2006 at University of Almustanserria, Baghdad, Iraq. His thesis title was: Expression of β -HCG and its pathological aspects in breast tumors. Currently, he is an Assistant Professor in Department of Pathology (Clinical Analysis) at College of Pharmacy, Hawler Medical University, Iraq since 2012. He published 12 scientific papers. He received more than 25 acknowledgments and outstanding awards.

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Acanthamoeba secretes extracellular aminopeptidases to target cells for phagocytosis by disruption

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Acanthamoeba is free-living protist pathogen capable of causing a blinding keratitis and granulomatous encephalitis. However, the pathogenesis mechanisms of *Acanthamoeba* are still not clear. Here, our results show that the rat glial C6 cells co-cultured with *Acanthamoeba* would be spherical and floated, even without contact the protists. And then, the *Acanthamoeba* protists would contact and engulf these cells. In order to clarify the contact-independent pathogenesis mechanism in *Acanthamoeba*, we collected the *Acanthamoeba* secreted proteins (Asp) to incubate with cells for identifying the extracellular virulent factors and investigating the cytotoxic process. Pre-treating the Asp with aminopeptidase inhibitor and the specific antibodies of *Acanthamoeba* aminopeptidase could delay the progression of cell disruption during Asp and cells co-incubation. Overall, these results suggest an important functional role of the *Acanthamoeba* secreted extracellular aminopeptidases in *Acanthamoeba* pathogenesis process. This study provides new perspectives for the study of the mechanism involved in the *Acanthamoeba* infection.

Biography

Wei-Chen Lin has completed his PhD from Chang Gung University and postdoctoral studies in the Center of Disease Control, Taiwan. Dr. Lin is one of the pioneers on studying miRNA gene regulatory network in protozoan. His major research interest is to use bioinformatics approaches to integrate data generated by high-throughput technologies to compare the gene, protein and miRNA expression levels of protozoan as a basis to elucidate the interactome of pathogen-host.

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The basic knowledge about the possibility to use the micronucleus test for the diagnosis of the doubt cases in the screening for the determination of breast cancer

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Introduction & Objectives: The aim of this study is to check the possibility to use the test with micronuclei in saliva for doubt cases detected in screening for breast cancer.

Materials & Methods: A bibliographic search has been executed on PubMed (MEDLINE), Home Genetic Reference, for articles published from Jan 1, 2000 to Dec 31, 2016, for the keywords: Micronuclei in exfoliated buccal cells in breast cancer. The key words are used in the research in free text, and with cross –referencing method application. Another search has been made for MN in breast cancer, from Jan 1, 2014 to today.

Results: Five studies show that in buccal cells, in breast cancer, the amount of MN are significantly higher than compared to benign cases as in six studies for the detection of micronuclei in needle aspirates ductal. Contrasting results are for MN in peripheral blood lymphocytes.

Discussion: The micronuclei scoring can be used as a biomarker on fine needle aspiration cytology smears of breast cancer, while the tests in peripheral blood lymphocytes, have known reproducibility problems. The references show that an increase of MN in exfoliated buccal mucosa cells test is interesting to apply the MN scoring in cases of doubt, according to functional BI-RADS category three (probably benign), and which are sent to a successive control.

Conclusions: It has verified that buccal cells in cases of breast cancer are significantly higher than the number of MN compared to benign cases. This indicates the possibility of applying this technique in cases of doubt in oral saliva.

Biography

Menicagli Laura has completed her Degree in Medicine and Surgery from University of Milan, Italy on 2007 and has specialization in Radiodiagnostics from University of Milan, Milan, Italy. She is the reader for the mammographic screening service organized by the ASL Milano 2.

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Hereditary spherocytosis and gallstones formation

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Hereditary spherocytosis (HS) is a heterogeneous group of hemolytic anemia caused by deficiency or dysfunction of red blood cell (RBC) cytoskeletal proteins. It is a common disorder located mostly in Caucasian population; most affected individuals have mild or only moderate hemolysis. In a few rare cases, the measurement of RBC membrane proteins is required to clarify the nature of the membrane disorder in absence of the family history. Patients with HS are at more risk of developing gallstones, whose prevention represents a major impetus for splenectomy in such patients. The main purpose of the study is to perform a mini review on the formation of gallstones in patients with hereditary spherocytosis. Hence, regular ultrasound and other diagnostic examinations are recommended for timely detection of any presence of gallstones in patients with HS.

Biography

Salma Al Dallal has completed her PhD at University of Manchester, UK. She has published 14 articles in reputed journals and has a work experience in Haematology & Blood Bank Laboratory. She has also published several papers in national and multinational journals. She is the senior member of training courses of haematology technicians at general hospital laboratory in Kuwait.

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Necrotizing sarcoid granulomatosis: Case report

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Necrotizing Sarcoid Granulomatosis (NSG) is a rare granulomatous pneumonitis which is composed of background of sarcoidosis-like granulomas with granulomatous vasculitis and variable amount of necrosis. We reported a case of 38-year-old non-smoking woman presented by left-sided chest pain and dyspnea for three days. Chest CT scan exhibited collapse consolidation of left lower lobe with presence of two septated small sized cystic lesions within collapsed segment. Video-Assisted Thoracic surgery (VATS) was performed and histological examination confirmed the diagnosis by excluding other causes of granulomatous disease. The prognosis of NSG is favorable and medical treatment is usually not necessary, as well as our case. NSG is a rare disease with nonspecific symptoms and good prognosis which frequently confused with Wegener's granulomatosis, sarcoidosis and churg strauss. This entity should also be considered as differential diagnosis of necrotizing granulomatous diseases.

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Morphological features of changes of various types of grafts in patients who died after coronary artery bypass graft surgery from isolated coronary heart disease and associated with hypertensive disease

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Objectives: Vascular graft failure is one of the most common finding in patients undergoing coronary artery bypass graft (CABG) surgery and still remains the major problem after surgery. The aim of the present study was to investigate features of pathomorphological changes in different type of grafts after CABG in patients with isolated coronary artery disease and associated with hypertensive disease.

Materials & Methods: Histopathological study was performed on 207 fragments of autopsy sections of autoarterial and autovenous grafts using light microscopy.

Results: It is shown that the condition of the vascular wall is dependent on hemodynamics leading to degenerative changes of the graft as a result of destructive and proliferative processes in the intima and the middle layer. Active replacement of smooth muscle cells of the media by fibrous tissue and then connective tissues leads to thickness of the vascular wall, stenosis on one hand and on the other hand development of unstable atheromatous plaques.

Conclusions: Morphological changes of the venous grafts in patients had undergone CABG and had died after surgery from coronary heart disease associated with hypertonic disease were more acute with more aggressive course of atherosclerotic changes with diffuse proliferation of processes and formation of unstable plaques.

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Antiproliferative and apoptosis inducing effects of nano-ZER in atherosclerotic-induced New Zealand White rabbit

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Atherosclerosis is a complex chronic inflammatory, degenerative and accumulative consequence of the arterial wall to injurious stimuli, which is significantly driven by persistence proliferative response. The pathophysiology of the disease implies its nanoscale nature and therefore necessitates new nano-medicine approaches to combat it. The role of nanotechnology in diagnosing cardiovascular disorders is expanding rapidly. While many herbs has shown to be efficacious in reducing and/or preventing early development of atherosclerosis, however, the role of the cyclic sesquiterpene, zerumbone (ZER) nanoparticles in this aspect still not documented. Since the objectives of this investigation is to evaluate the antiproliferative property of nono-ZER, in preventing and reducing macrophages assembly and vascular smooth muscle cells (VSMCs) proliferation in early-developed atherosclerotic lesions in the aortas of New Zealand white rabbits fed a cholesterol-rich diet, via induction of programmed cell death (apoptosis) in the built-up cells (macrophages) as well proliferative cells VSMCs. A total of 30 rabbits were equally assigned in to five groups namely, control (CN), hypercholesterolemic diet (HCD) and nano-ZER preventive groups (NZ-I, NZ-II and NZ-III). Control group rabbits received standard pellet, HCD group enriched with 1% pure cholesterol, nano-ZER treated animals supplemented with different concentration of nano-ZER (0.4% 8 mg/kg, 0.8% 16 mg/kg and 1% 20 mg/kg).

Tissue samples were collected from thoracic aorta and aortic arch at 10 weeks post-feeding with cholesterol-rich diet for immunohistochemistry and TUNEL assay. The following antibodies were used against cellular protein components of macrophages (RAM-11) and smooth muscle actin (HHF-35). Atheromas plaque built up were significantly $P < 0.05$ diminished in nano-ZER supplemented groups in diverse manner (dose dependent), were it's more pronounced in 16 mg/kg and 20 mg/kg treated groups. However, most of the nano-ZER treated groups showed marked dropping in plaque development in contrast to cholesterol-rich diet group. Our data indicate that is nano-ZER significantly avert and decreases early plague formation and development-establishment via significant induction of apoptosis eventually reduction in monocytes and/or macrophages migration-aggregation, lessen smooth muscle cells proliferation-migration, and finally retards foam cell formation and plaque progression.

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Human papillomavirus infection in Chinese oropharyngeal squamous cell carcinoma and its relationship with survival by tissue microarray analysis

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Squamous cell carcinoma (SCC) in the head and neck region is the sixth most common malignancy throughout the world today. Given more and more basic and clinical research and reports emerged, its overall 5-year survival rate is still poor. The further research on its etiology and pathogenesis in different countries and regions may apply new clues for the choice of therapeutic strategy. It is well known that classical SCC in oral cavity is closely related with the abuse of tobacco and alcohol. However, 90% of oropharyngeal SCC in North America and Europe is associated with high risk human papillomavirus (HPV) infections. These HPV+ cases presented more favorable prognosis than HPV- cases. But the infection rate of HPV in Chinese oropharyngeal SCC was much lower than that in western countries through our study. We also discussed the demographic characteristics, the relationship between HPV with the differentiation and survival of oropharyngeal SCC.

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Antioxidant activity and Hepatoprotective effects of *Centaurea incana* on CCL4-induced liver toxicity in rats

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For study of preventive effect of extract methanolic of *Centaurea incana* on CCL4 –induced hepatotoxicity, our study carry out on rats as follows: The animals were randomly divided in to 4 different groups comprising 7 animals each. Group I served as controls and received an injection of vehicle (olive oil) alone; Acute liver injury in rats was induced by a single intraperitoneal injection with CCl₄ dissolved in an equal volume of olive oil at a dose of 3 mL/kg body weight, group II, which is well documented to induce hepatotoxicity. Group III was administered Methanolic extract of *Centaurea incana* at a dose of 500 mg/kg alone. In group IV was administered Methanolic extract of *Centaurea incana* at a dose of 500 mg/kg and was injected by CCl₄ i.p , at a dose of 3ml/kg body weight. After 4 weeks of treatment, All of the animals were sacrificed 24 h after administration of CCl₄, and blood was collected, serum separated and stored at –20 °C.

Results: The single intraperitoneal injection with CCl₄ caused severe hepatotoxicity in rats, as evidenced by the significant elevation of serum AST and ALT activities after the administration of CCl₄. the concentration of MDA, an end product of lipid peroxidation, in the rats treated with CCl₄ was increased 2.7-fold when compared with the vehicle control rats. However, pre-treatment with *Centaurea incana* significantly prevented the elevation of serum AST and ALT activities induced by CCl₄ treatment. Consistent with the serum AST and ALT activities, pre-treatment with *Centaurea incana* for 4 weeks to the rats resulted in a significant decrease in the concentration of hepatic MDA when compared with the CCl₄ group.

In conclusion, our investigation provided convincing data that *Centaurea incana* decrease the lipid per-oxidation and liver enzymes, and increase the anti-oxidant defense system activity in the CCl₄-treated rats. The mechanisms underlying hepatoprotection of the methanolic extract of *Centaurea incana* may be related to both its radical scavenging properties and indicate effects as a regulator of antioxidative systems.

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The new paradigm of precision medicine: Evidence-based clinical oncology

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Precision medicine is an emerging approach for disease treatment and prevention that takes into consideration the variations in genomic makeup, environmental exposure, and social economic status of each individual. Evidence-based oncology integrates the clinical expertise, patient values and the best available evidence, especially the cancer genomic information of a patient in clinical decision making. Next-generation sequencing (NGS) technologies have revolutionized genomic research by decreasing the cost of sequencing while increasing the throughput. Clinical application of NGS in cancer can detect clinically actionable genetic/genomic alterations that are critical for cancer care. In certain cancers, patient risk and prognosis can be predicted based on the mutation profile identified by NGS. Many targeted therapies have been developed for cancer patients who bear specific genomic alterations. However, choosing right NGS techniques for appropriate clinical applications can be challenging, especially in clinical oncology, where the material for testing is often limited and the turn-around time of testing is frequently constrained to just a few days. Currently, targeted NGS approaches have emerged as the best fit for clinical oncology. We have developed and validated multiple large NGS panels that allow the detection of single nucleotide variations (SNVs), small indels, copy number variations (CNVs), and novel fusion genes in different cancers, as well as pathogenic variants associated with cancer predispositions. These panels have been applied to thousands of clinical cases and have provided critical genomic information to aid in patient management decision making. Currently, whole exome and whole genome sequencing are mostly used in cancer research. As the cost of running NGS-based test continues to decrease and software for NGS data analysis continues to improve, clinical application of whole exome, whole genome, and whole transcriptome sequencing in precision cancer care is just a matter of time.

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The new paradigm of precision medicine: Evidence-based clinical oncology

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Precision medicine is an emerging approach for disease treatment and prevention that takes into consideration the variations in genomic makeup, environmental exposure, and social economic status of each individual. Evidence-based oncology integrates the clinical expertise, patient values and the best available evidence, especially the cancer genomic information of a patient in clinical decision making. Next-generation sequencing (NGS) technologies have revolutionized genomic research by decreasing the cost of sequencing while increasing the throughput. Clinical application of NGS in cancer can detect clinically actionable genetic/genomic alterations that are critical for cancer care. In certain cancers, patient risk and prognosis can be predicted based on the mutation profile identified by NGS. Many targeted therapies have been developed for cancer patients who bear specific genomic alterations. However, choosing right NGS techniques for appropriate clinical applications can be challenging, especially in clinical oncology, where the material for testing is often limited and the turn-around time of testing is frequently constrained to just a few days. Currently, targeted NGS approaches have emerged as the best fit for clinical oncology. We have developed and validated multiple large NGS panels that allow the detection of single nucleotide variations (SNVs), small indels, copy number variations (CNVs), and novel fusion genes in different cancers, as well as pathogenic variants associated with cancer predispositions. These panels have been applied to thousands of clinical cases and have provided critical genomic information to aid in patient management decision making. Currently, whole exome and whole genome sequencing are mostly used in cancer research. As the cost of running NGS-based test continues to decrease and software for NGS data analysis continues to improve, clinical application of whole exome, whole genome, and whole transcriptome sequencing in precision cancer care is just a matter of time.

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Improving quality of colorectal cancer care: Multidisciplinary collaboration on clinical auditing and outcomes research

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The Circumferential Resection Margin (CRM) is a significant prognostic factor for local recurrence, distant metastasis, and survival after rectal cancer surgery. Therefore, availability of this parameter is essential. Although the Dutch total mesorectal excision trial raised awareness about CRM in the late 1990s, quality assurance on pathologic reporting was not available until the Dutch Surgical Colorectal Audit (DSCA) started in 2009. The present study describes the rates of CRM reporting and involvement since the start of the DSCA and analyzes whether improvement of these parameters can be attributed to the audit. Data from the DSCA (2009-2013) were analyzed. A total of 12,669 patients were included for analysis. The mean percentage of patients with a reported CRM increased from 52.7% to 94.2% (2009-2013) and inters hospital variation decreased. The percentage of patients with CRM involvement decreased from 14.2% to 5.6%. Low hospital volume (<20 cases/year) was independently associated with a higher risk of CRM involvement (OR=1.54; 95% CI: 1.12-2.11). The APE was associated with a slight, non-significant, increased risk of CRM involvement [odds ratio (OR)=1.33; confidence interval (CI)=0.93-1.90]. Absolute percentages of CRM involvement were 8% and 12% after LAR and APE. In multivariable analysis, the year of DSCA registration remained a significant predictor of CRM involvement. After the introduction of the DSCA, a dramatic improvement in CRM reporting and a major decrease of CRM involvement after rectal cancer surgery have occurred. This study suggests that a national quality assurance program has been the driving force behind these achievements.

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