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Cistite Enfisematosa

Category: Case Report

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ABSTRACT

Introduction: Emphysematous cystitis (EC) is a rare disorder (135 cases published in 50 years), which is characterized by gas collections within the bladder wall and lumen. It is more common in middle-aged diabetic women.

Case Report: A 78-year-old female presented to the emergency department with syncope. The patient was afebrile, hypotensive and complained of abdominal pain. Her past medical history was significant for diabetes mellitus and hypertension. During the hospital stay she became feverish, the laboratory evaluation revealed a C-reactive protein increase and leukocytosis with neutrophilia. Chest x-ray and urine analysis were normal. A computed tomographic (CT) scan showed gas within the urinary bladder wall and blood vessels, consistent with EC. A Foley catheter was placed immediately and the patient started intravenous antibiotic therapy with gentamicin and metronidazole. Urine culture grew *Escherichia coli* and *Klebsiella pneumoniae* and the antibiotic was changed to meropenem according to the sensitivities of the cultured organisms. Blood cultures were negative. After 10 days the abdominal CT showed complete resolution of gas accumulation. The patient completed a 21-day antibiotic course with clinical improvement.

Conclusion: The most commonly reported organisms are *E. coli* and *Klebsiella pneumoniae*. Abdominal pain is the most common symptom, but clinical findings range from asymptomatic to fulminant sepsis. Treatment involves broad-spectrum antibiotics, drainage of the bladder and glycemia management. An adequate and early treatment is essential to avoid morbidity and mortality (7%). The diagnosis requires a high index of suspicion and should be considered in patients with risk factors to complicated urinary tract infections.



RESUMO

Introdução: A cistite enfisematosa (CE) é uma doença rara (135 casos publicados em 50 anos), caracterizada pela presença de ar dentro da parede e lúmen vesicais, que afecta tipicamente mulheres diabéticas de meia-idade.

Caso Clínico: Mulher, 78 anos, recorre ao serviço de urgência por síncope. Encontrava-se apirética, hipotensa e com dor abdominal generalizada. Tem história de diabetes mellitus tipo 2 e hipertensão arterial. No internamento desenvolve febre, subida da proteína C reactiva e leucocitose com neutrofilia. Radiografia torácica e urina II sem alterações. Tomografia computadorizada (TC) abdominal revelou ar intramural na parede vesical e vasos adjacentes, compatível com CE. A doente foi algaliada e iniciou antibioterapia empírica com gentamicina e metronidazol, posteriormente alterada para meropenem após isolamento de *Escherichia coli* ESBL e *Klebsiella pneumoniae* em urocultura. Hemoculturas negativas. Verificou-se normalização dos achados da TC após 10 dias de antibioterapia, que cumpriu durante 21 dias, com melhoria clínica e analítica.

Conclusão: *E. coli* e *Klebsiella pneumoniae* são os microorganismos mais frequentemente implicados na CE. A dor abdominal é o sintoma mais frequente, mas a clínica pode variar desde assintomático a sépsis grave. Tratamento médico com antibioterapia endovenosa de largo espectro, drenagem vesical e controlo glicémico é o suficiente na maioria dos casos. Deve ser iniciado precocemente para evitar complicações, associadas a importante morbidade e mortalidade (7%). Pela atipia de apresentação inicial, o diagnóstico exige uma grande suspeição clínica e deve ser considerado na presença de factores de risco para infecções complicadas do trato urinário.

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Introducing a novel web-based anatomy study platform - VIMU

Category: Original Investigation

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ABSTRACT

Introduction: Technology changed the way that human body is seen and approached. In this context, the teaching and learning processes in anatomy rely increasingly in new tools, as is the case of e-learning and e-assessment. This work aims to present VIMU online platform and discuss its use for teaching/learning in medical pre-graduation/post-graduation and in continuous education in Anatomy field.

Materials and Methods: Following the development of "Virtual Quiz", a tool build with the objective to improve identification of anatomical structures, we proceeded with reformulation of this project by creating of a new web-based application which functions as a study manager towards the improvement of students' cognitive competences in anatomy in undergraduate medical course.

Results: The study manager software allows students to practice their capacity to identify anatomical structures in x-ray, CT and MRI films, as well as images of sectional anatomy ("Virtual Quiz"), as well training their neuroanatomical correlations and clinical features in the format of multiple choice question examination ("Clinical Vignettes").

Using this software it is possible to evaluate the users' learning progress, which is useful to implement pedagogical actions in regard of the best knowledge acquisition.

Discussion/ Conclusions: The continuous evolution of the scientific knowledge in the medical field demands for physicians to incessantly update and certificate their knowledge and skills. Technology plays an important role in medical practice, and begin also to play an important role in medical education. The study manager described aims to provide a new platform to maximize the learning process in Anatomy

RESUMO

Introdução: A tecnologia mudou o modo como o corpo humano é visto e abordado. Neste contexto, o processo de ensino e aprendizagem é cada vez mais depende de novas ferramentas como *e-learning* e *e-assessment*. Este trabalho pretende apresentar a plataforma online VIMU e discutir o seu uso no ensino/aprendizagem na pré-graduação/pós-graduação e na educação continua no campo da Anatomia.



Materiais e Métodos: No seguimento do desenvolvimento do “Virtual Quiz”, uma ferramenta construída com o objetivo de melhorar a identificação de estruturas anatómicas, procedemos à reformulação deste projeto ao criar uma nova aplicação online que funciona como gestor de estudo no sentido de melhorar as competências cognitivas em anatomia dos estudantes de medicina pré-graduados.

Resultados: O *software* gestor de estudo permite ao estudantes treinar as capacidades de identificação de estruturas nas imagens de Radiografia, TC e RMN, tal como imagens de anatomia seccional (“Virtual Quiz”), assim como treinar as suas correlações neuroanatômicas e características clínicas sob a forma de questões de escolha múltipla (“Clinical Vignettes”).

Usando este *software* é possível avaliar o progresso de aprendizagem dos utilizadores, sendo assim útil na implementação de ações pedagógicas no sentido da melhor aquisição de conhecimentos.

Discussão/Conclusão: A evolução contínua do conhecimento científico no campo da medicina exige que os médicos incessantemente atualizem e atestem os seus conhecimentos/ aptidões. A tecnologia tem um importante papel na prática médica, e começa a ter um importante papel na educação médica. O gestor de estudo descrito pretende proporcionar uma nova plataforma que maximize a aprendizagem em anatomia.

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How to achieve quality in medical education? Inter-rater agreement about item-writing flaws in multiple-choice questions: the case of clinical anatomy

Category: Original Investigation

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ABSTRACT

Introduction: Quality in medical education is the foundation for definition of standards in the outcomes of the medical courses.

The multiple-choice question (MCQ) examination type is recurrently used to assess students in health science disciplines. Despite this fact, MCQ item have often item-writing flaws or violations to MCQ item-writing guidelines, and few educators have formal instruction in writing MCQs.

The purpose of this study was to estimate the inter-rater agreement about item classification as either standard or flawed using clinical anatomy as the focus of this study.

Materials and Methods: Four judges (2 teacher/2 students), blinded to all item performance data, independently classified each one of 920 MCQ questions from 10 examinations (last 5 academic years) as either standard or flawed. The Fleiss' Kappa was use to evaluate the inter-rater agreement between 4 judges previous the consensus process.

Results: The agreement about item classification as either standard or flawed was fair (kappa=0.3). The agreement was moderate/substantial for the following principles: "use positive, no negatives" (kappa=0.7), "use carefully none of the above" (kappa=0.8), "avoid all of the above" (kappa=0.7) and "Choice length equal" (kappa=0.5). All other principals showed poor or slight agreement.

Discussion/ Conclusions: The results showed many disagreements among judges about item classification, previous the consensus process; however, for the more prevalent principles the agreement was substantial.

In the future, it is important to measure the impact that this flaws have on the quality indicators (difficulty indices and discrimination indices) of the examinations.

RESUMO

Introdução: A qualidade da educação médica é a fundação dos padrões de qualidade dos cursos médicos.

Os exames de questões de escolha múltipla (QEM) é recorrentemente usada para avaliar os estudantes, em



ciências da saúde. Apesar disto, as QEM apresentam frequentemente falhas relativamente à escrita ou violam as orientações para a sua criação e poucos educadores têm instrução formal para sua escrita.

O objetivo deste estudo foi estimar a conformidade entre avaliadores relativamente à classificação dos itens como sendo de qualidade ou defeituosos, usando como foco de estudo a avaliação em anatomia clínica.

Materiais e Métodos: Quatro avaliadores (2 professores/2 estudantes), blinded para a informação de performance dos itens, classificaram, independentemente, cada uma das 920 QEMs provenientes de 10 exames (últimos 5 anos académicos) como sendo de qualidade ou defeituosas. O Fleiss Kappa foi usado para avaliar a conformidade entre avaliadores, antes do processo de consenso.

Resultados: A conformidade da classificação dos itens como sendo de qualidade ou defeituosos foi relativa ($\kappa=0.3$). Esta foi moderada/substantial para os princípios: “usar afirmações, sem negações” ($\kappa=0.7$), “usar cuidadosamente nenhum dos anteriores” ($\kappa=0.8$), “evitar todos os anteriores” ($\kappa=0.7$) e “igual tamanho de escolha” ($\kappa=0.5$). Todos os outros princípios mostraram pouca ou nenhuma conformidade.

Discussão/Conclusões: Os resultados mostraram múltiplas discórdias entre os avaliadores relativamente à classificação dos itens, anteriormente ao processo de consenso. No respeito aos princípios mais prevalentes a conformidade foi substancial.

Futuramente, é importante medir o impacto que estes defeitos têm na qualidade dos indicadores (índices de dificuldade e discriminação) dos exames.

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Fertility Preservation in Cancer Patients Undergoing Gonadotoxic Treatments

Category: Original Investigation

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ABSTRACT

Background: The association between better cancer detection and treatment techniques and the increase of incidence of cancer among younger patients have resulted in a bigger number of patients reaching reproductive age, which associated with the known gonadotoxic effects of cancer therapies raises issues about the reproductive health and fertility preservation in this patients.

Methods: A questionnaire was sent by the Portuguese Society of Oncology and by 20 service directors of the Oncology Referral National Network.

Results: Thirty-five replies were obtained, and they showed that 97% of oncologists believe that more attention should be given to this topic and 52.4% mentioned already addressing the subject with the patients, despite of their limited knowledge on the available procedures. Only 5 out of 30 doctors stated giving written information and 44% never referred a patient to Reproductive Medicine.

Conclusions: The main conclusions of this study highlight the deficient knowledge of doctors regarding the FP procedures approved in Portugal and the neglect in providing a written educational support to the patient. Training lectures to improve doctor's knowledge on FP issues should be organized and the establishment of Referral protocols between Oncology and Reproductive Medicine could be fruitful in the improvement of the approach to the oncological patient in reproductive age.

RESUMO

Enquadramento: A associação entre melhores técnicas de deteção e tratamento do cancro e o aumento da sua incidência em idades mais jovens resultaram num maior número de doentes a alcançar a idade fértil, o que associado aos efeitos gonadotóxicos conhecidos das terapêuticas antineoplásicas levanta questões acerca da Saúde Reprodutiva e Preservação da Fertilidade (PF) nestes doentes.

Métodos: Um inquérito foi divulgado pela Sociedade Portuguesa de Oncologia e por 20 diretores de serviço da Rede Nacional de Referência de Oncologia.

Resultados: Obtiveram-se um total de 35 respostas, que demonstraram que 97% dos oncologistas participantes entendem que este tema deve ser alvo de maior atenção e 52,4% referem já o abordar com o doente, apesar de reconhecerem conhecimentos limitados sobre os procedimentos disponíveis. Apenas 5 em 30 médicos referem fornecer informação escrita e 44% nunca referenciaram um doente à Medicina da



Reprodução

Conclusões: As conclusões desta investigação sugerem um nível baixo de conhecimento dos oncologistas portugueses acerca da preservação da Fertilidade e destacam a falta em fornecer um suporte educacional ao doente. Ações de formação sobre o tema e o estabelecimento de protocolos de referência entre a Oncologia e a Medicina da Reprodução poderão ser frutíferos na melhoria da abordagem ao doente oncológico em idade fértil.

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Hemorragia digestiva alta: Marcadores de gravidade para a Sala de Emergência

Category: Original Investigation

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ABSTRACT

Introduction: Although it is recommended the use of risk scores in the approach to patients with upper gastrointestinal bleeding (UGIB), it is unclear if any of those are sufficiently predictive to properly determine level of care in emergency setting. This study aims to evaluate independent clinical and laboratory variables associated with need for organ support and consequent admission to Emergency Room (ER) and to study the adequacy of AIMS65 and Glasgow-Blatchford Bleeding Score (GBS) in emergency setting.

Methods: A retrospective cohort study was conducted in patients with UGIB admitted to the ER of a tertiary hospital between January 2010 and September 2014. Need for organ support was defined as need for endotracheal intubation, hemoderivatives transfusion, mechanical ventilation or vasopressor support. Association of independent predictors with need for organ support was studied through logistic regression models. Accuracy of risk scores AIMS65 and GBS to predict need for organ support was assessed by the area under the curve (AUC).

Results: 201 patients were included in the study. In-hospital mortality rate was 21,9 % (44 patients) and 77,1% (155 patients) required organ support. Ischemic heart disease, chronic kidney disease, raised urea and low hemoglobin are independent predictors for need of organ support. AIMS65 has higher accuracy in detecting need for organ support (AUC, 0,734; 95% CI 0,651-0,816) than GBS (AUC, 0,717; 95% CI 0,628-0,807).

Conclusions: Both risk scores may be a useful tool to determine the level of care in ED. The accuracy can be improved with new clinical and laboratory data.

RESUMO

Introdução: Embora se recomende a utilização de escalas de estratificação de risco na abordagem do doente com hemorragia digestiva alta (HDA), desconhece-se se, no contexto de emergência, alguma é suficientemente preditiva para determinar o nível de cuidados. Os objetivos deste estudo são determinar variáveis clínicas e laboratoriais associadas à necessidade de suporte orgânico e consequente admissão na Sala de Emergência (SE) e estudar a adequação da utilização das escalas AIMS65 e Glasgow-Blatchford (GBS) no SU.

Métodos: Estudo de coorte retrospectivo conduzido em doentes com HDA admitidos na SE de um hospital



terciário entre janeiro de 2010 e setembro de 2014. Definiu-se necessidade de suporte orgânico como necessidade de entubação endotraqueal, transfusão de hemoderivados, ventilação mecânica ou suporte vasopressor. Identificaram-se preditores independentes que se associam com necessidade de suporte orgânico através de modelos de regressão logística. Determinou-se a precisão das escalas AIMS65 e GBS na identificação da necessidade de suporte orgânico utilizando-se curvas ROC.

Resultados: 201 doentes foram incluídos no estudo. A taxa de mortalidade hospitalar foi 21,9% (44 doentes) e 77,1% (155 doentes) necessitaram de suporte orgânico. Cardiopatia isquémica, doença renal crónica, elevação da ureia e baixo nível de hemoglobina são preditores independentes de necessidade de suporte orgânico. A escala AIMS65 tem maior precisão na identificação de necessidade de suporte orgânico (AUC, 0,734; 95% IC 0,651-0,816) que GBS (AUC, 0,717; 95% IC 0,628-0,807).

Conclusões: Ambas escalas têm utilidade na determinação do nível de cuidados no SU. A precisão pode ser melhorada com a incorporação de novos dados clínicos e laboratoriais.

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Apathy in Parkinson's Disease

Category: Original Investigation

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ABSTRACT

Background: Apathy is one of the most frequent and disabling neuropsychiatric symptoms in neurodegenerative diseases, such as Parkinson's disease (PD). The aim of this study is to evaluate the prevalence and severity of apathy in a sample of nondemented patients with PD at different disease stages and correlate it with other clinical determinants.

Methods: 36 nondemented patients with PD were recruited from the Movement Disorders Unit of the Coimbra Hospital and University Centre. In all patients, demographic and clinical data were collected, as well as their motor score (Movement Disorder Society-Unified Parkinson's Disease Rating Scale), cognitive status (Mini Mental State Examination and Montreal Cognitive Assessment), depressive symptoms (Beck Depression Inventory-II) and apathy (Apathy Evaluation Scale - clinical version).

Results: Apathy was present in 58% of the studied sample. In these patients, apathy was strongly correlated with HY stage ($p < .05$), motor score ($p < .05$) and presence of depressive symptoms ($p < .05$); the latter was found to be an independent predictor of apathy ($p < .05$).

Conclusions: In this study, we confirmed that apathy is a common clinical finding in patients with PD. The strong correlation between apathy and depression suggests a common neural basis, a dysfunction of the mesocorticolimbic circuits as hypothesized. Therefore, the systematic assessment of both clinical features in PD patients is very important, giving their impact in patients' quality of life.

RESUMO

Introdução: A apatia é um dos sintomas neuropsiquiátricos mais frequentes e incapacitantes nas doenças neurodegenerativas, como a Doença de Parkinson (DP). O objectivo deste estudo é avaliar a prevalência e gravidade da apatia numa amostra de doentes com DP não-demenciados em diferentes estádios de doença e correlacioná-la com outras determinantes clínicas.

Métodos: 36 doentes não-demenciados com DP foram recrutados em consulta de Doenças do Movimento no Centro Hospitalar e Universitário de Coimbra. Para todos os doentes, foram recolhidos dados clínicos e demográficos, e determinados o seu score motor (Movement Disorder Society-Unified Parkinson's Disease Rating Scale, MDS-UPDRS), status cognitivo (Mini Mental State Examination - MMSE, Montreal Cognitive Assessment - MoCA), sintomatologia depressiva (Beck Depression Inventory-II, BDI-II) e apatia (Escala da



Avaliação da Apatia – AES, versão clínica).

Resultados: A apatia estava presente em 58% da amostra estudada. Nestes doentes, a apatia mostrou correlação com o estadió de Hohen e Yahr ($p < .05$), o score motor ($p < .05$) e a presença de sintomatologia depressiva ($p < .05$); esta última mostrou ser um preditor independente de apatia ($p < .05$).

Conclusão: Neste estudo, confirmamos que a apatia é um achado clínico comum em doentes com DP. A forte correlação entre apatia e depressão sugere a existência de uma base neuronal comum, nomeadamente uma disfunção dos circuitos mesocorticolímbicos. Assim, a avaliação sistemática de ambas as determinantes clínicas nos doentes com DP é muito importante, dado o impacto destas na qualidade de vida dos doentes.

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Factores preditivos de resposta ao retratamento com docetaxel em doentes com carcinoma da próstata metastizado castração resistente

Category: Original Investigation

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ABSTRACT

Introduction: Prostate cancer is a major health concern. Although the initial stage is characterized by slow progression, it ultimately progresses through metastization. At this stage, docetaxel-based chemotherapy is the cornerstone of treatment. Inherent or acquired resistance commonly leads to disease relapse, however some patients still respond to a rechallenge with docetaxel.

Objective: The aim of this study was to identify predictive factors of response to re-treatment in patients with metastatic castration-resistant prostate cancer.

Methods: This retrospective longitudinal study evaluated patients treated with docetaxel as first-line chemotherapy and then at rechallenge, between 2001 and 2014 at IPO Porto. The endpoints of outcome were progression-free survival and overall survival.

Results: 58 patients underwent rechallenge. Median progression-free survival was 10.5 months [95% confidence interval (CI) 7.2-13.9] and overall survival was 17.5 months (95% CI 13.5-21.5). Factors prior to first-line treatment with statistically significant impact in OS after rechallenge were: time between diagnosis and docetaxel ($p = 0.046$); alkaline phosphatase ($p = 4.1 \times 10^{-5}$) and pain ($p = 9.4 \times 10^{-8}$). Multivariate analysis revealed a hazard ratio (HR) of 6.00 for moderate/severe pain (95% CI 2.28-15.80; $p = 2.8 \times 10^{-4}$). Only the type of progression after the first docetaxel had a statistically significant impact in PFS after rechallenge ($p = 0.002$). Multivariate analysis revealed a HR of 3.97 for PSA and clinical progression (95% CI 1.61-9.79; $p = 0.003$).

Conclusion: Moderate/severe pain and elevated alkaline phosphatase prior to first chemotherapy are associated with worse outcome. Serum PSA and clinical progression after first docetaxel predict faster progression after rechallenge.

RESUMO

Introdução: O carcinoma da próstata constitui um problema de saúde pública a nível mundial. Inicialmente apresenta uma progressão lenta, mas a evolução culmina com a metastização (mCaPCR). Nesta fase, o tratamento de primeira linha consiste em quimioterapia com docetaxel. Existem vários mecanismos de resistência, mas um grupo de doentes beneficia do retratamento.

Objectivo: O objetivo consiste em determinar fatores preditivos de resposta ao retratamento em doentes com



mCaPCR.

Métodos: Este estudo retrospectivo longitudinal avaliou 58 doentes que realizaram docetaxel na primeira e segunda linha, entre 2001 e 2014 no IPO do Porto. Os *endpoints* incluem a sobrevivência global (OS) e o tempo até à progressão da doença (PFS).

Resultados: A PFS foi de 10,5 meses (IC 95% 7,2-13,9) e OS de 17,5 meses (IC 95% 13,5-21,5). As variáveis estatisticamente significativas na OS após o retratamento foram: tempo entre o diagnóstico e introdução da primeira quimioterapia ($p = 0,046$), fosfatase alcalina ($p = 4,1 \times 10^{-5}$) e dor ($p = 9,4 \times 10^{-8}$). A análise multivariada revelou um *hazard ratio* (HR) de 6,00 para a dor moderada/severa (IC 95% 2,28-15,80; $p = 2,8 \times 10^{-4}$). Apenas o tipo de progressão após o primeiro tratamento teve significância estatística na PFS após o re-tratamento ($p = 0,002$). Verificou-se um HR de 3,97 para progressão clínica e por PSA (IC 95% 1,61-9,79; $p = 0,003$).

Conclusão: Dor moderada/severa e fosfatase alcalina elevada antes da primeira quimioterapia estão associados a pior prognóstico. Progressão clínica e por PSA após a primeira linha estão associados a uma maior probabilidade de progressão mais rápida após retratamento.

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