Published Research -SQCCCRC

Other | Multi-Program
2022

Radiology & Nuclear Medicine

1. Abubakar S, Al Riyami K, Jain A, Jayakrishnan V, Tag N. Reverse Liver Spleen Uptake on [68 Ga] Ga-PSMA-11 PET/CT. Clin Nucl Med. 2022Dec1;47(12):1063-065.doi:10.1097/RLU.0000000000004285. Epub 2022 May 27. PMID: 35619198.

   A case report that highlights variant biodistribution, higher liver uptake than previously described, of Ga-68 PSMA in patients with prostate cancer. The patient has chronic renal failure which is also apparent on the PSMA scan. We postulated that this was responsible for alternative hepatic excretion which led to increased liver uptake. This is important for the clinicians and researchers especially as regards using liver uptake to select patients for Lutetium therapy.

2. Kheruka S, Al Maymani N, Al Makhmari N, Al Rahii T, HAl Saidi T, Al Riyami K, et al. Advancing Theranostics' Potential for Precision Medicine. Clin Oncol.2022; 7: 1945. ISSN: 2474-1663.

   Theranostics is a fascinating field of molecular medicine. Theranostic uses targeted pharmaceuticals for both imaging and treating cancer, made feasible by molecular imaging methods like PET and SPECT (SPECT). Patients with cancer may benefit from its ability to identify subgroups that respond to targeted treatment. And doctors admire its achievements and promise to help them
   manage illnesses more efficiently by matching patients with the most effective medications. Industry leaders are improving molecular imaging technology and seeking innovative tracers for targeted therapies. They provide access to new drugs and push the limits of molecular imaging using PET/CT and SPECT/CT. New molecular imaging technology provides additional imaging data for processing and AI-powered automated tools and reconstruction algorithms to aid clinicians in making a difficult diagnosis. Theranostics uses molecular imaging to non-invasively evaluate drug uptake, tumor tissue, and therapy response. With extensive data, theranostic target pairs have been established, confirmed, and successfully used to treat

neuroendocrine tumors, lymphomas, neuroblastomas, and, more recently, various forms ofthe prostate.

3. **Co-Authored a book on 'Radiation Safety Guide for Nuclear Medicine Professionals' Published by Springer Singapore: Hardcover ISBN 978-981-19-4517 Published: 16 November 2022 Softcover ISBN 978-981-19-4520, eBook ISBN 978-981-19-4518-2, DOI https://doi.org/10.1007/978-981-19-4518-2. Authors: Pankaj Tandon, Dibya Prakash, Subhash Chand Kheruka,Nagesh N Bhat.**

   Comprehensive understanding of radiation safety from basics to advanced topics, applicable in daily practices.
   Guidance on planning and designing nuclear medicine facilities with optimal safety considerations.
   Detailed insight into the workings of radiation detectors and quality assurance for advanced technologies like PET and SPECT.
   Clarity on transport regulations, emergency response, and radioactive waste management.
   Essential preparation tool for radiological safety officer certification with an assortment of model questions.
   A valuable reference for students in nuclear medicine and those preparing for radiation safety certification, offering both foundational knowledge and practice questions.
   Written in a clear, accessible language suitable for professionals of all levels.

4. **Anjali Jain, Sharjeel Usmani, Khulood Al Riyami et al. Physiological F-18 FDG Uptake in Normal Pituitary Gland on Digital PET Scanner. World J Nucl Med 2023; 22(02): 152-170. DOI: 10.1055/s-0043-1769942**

   This retrospective study was conducted at Sultan Qaboos Comprehensive Cancer Care and Research Centre. 88 F-18 FDG PET CT scans done on digital PET scanner (dPET)with normal pituitary gland on MRI brain were included. Our study showed that pituitary gland uptake of 18F-FDG is commonly seen on dPET. Mild to moderate grade of uptake could be physiological with no requirement for further evaluation. A severe grade of 18F-FDG uptake in PG should be evaluated further with an MRI brain and biochemical evaluation to exclude pituitary pathology.
   This study is unique as very little information is available in literature and digital PET scanners are newer technology and not available commonly around the world. Adequate information of physiological pituitary gland

uptake is important as it helps radiologists to interpret the findings of pituitary gland uptake with caution which will save radiation, cost and time for the patient and health care workers.

Nursing

1. **Al-Awaisi H, Al-Harthy S, Jeyaseelan L. Prevalence and Factors Affecting Difficult Intravenous Access in Children in Oman: A Cross-sectional Study. Oman Med J. 2022 Jul 31;37(4) :e397. doi: 10.5001/omj.2022.76. PMID: 35915763; PMCID: PMC9280919.**

   Peripheral intravenous (IV) access is a standard procedure in clinical settings. Nevertheless, previous studies have indicated that difficult peripheral IV access is prevalent in children. This study aimed to determine the prevalence and factors contributing to difficult peripheral IV cannulation in children admitted to a tertiary care hospital in Oman. Methods: This cross-sectional study was conducted from September to December 2015 at Sultan Qaboos University Hospital in Muscat, Oman. Nurses collected data concerning factors contributing to difficult IV access in children. Results: A total of 511 children undergoing cannulation during the study period were
   included in the analysis. Overall, 23.3% of the children experienced two or more cannulation attempts. The study identified three variables associated with successful cannulation in cases of difficult IV access. Visible veins were 2.72-times (95% CI: 1.58–4.68) more likely to be associated with success ($p < 0.001$), while palpable veins were 2.22-times (95% CI: 1.29–3.83) more likely to be associated with success ($p = 0.004$). However, scarring from previous IV access attempts was half (95% CI: 0.31–0.77) as likely to be associated with successful cannulation ($p = 0.002$). Conclusions: We identified statistically significant variables related to difficult IV cannulation in children, which we used to develop a prediction tool to assess the likelihood of difficult IV access in pediatric patients. Further research is necessary to validate the use of the difficult IV access prediction tool in this population.

2. **Mohammed Al-Azri, Huda Al-Awaisi. Exploring causes of delays in help-seeking behaviours among symptomatic Omani women diagnosed with late-stage breast cancer - A qualitative study, European Journal of Oncology Nursing, Volume 61,2022.**

Breast cancer (BC) is the most commonly diagnosed cancer in Oman; however, the majority of women are diagnosed at a relatively young age and late stage. Delays in BC diagnosis may be attributable to patient-related barriers to medical help-seeking or negative perceptions of cancer or a cancer diagnosis. Identifying and addressing patients-related barriers to medical help-seeking may help early BC detection, increase the survival rate, and improve prognosis. This study aimed to explore causes of delays in medical help-seeking behaviours among symptomatic Omani women diagnosed with late-stage BC. Methods: Purposeful sampling was used to identify Omani women diagnosed with late-stage BC at the two main referral oncology centres in Oman. Semi-structured individual interviews were utilised to collect data regarding the participants' reasons for delaying seeking medical help. A total of 17 women participated in the study. The mean age was 41.94 ± 7.87 years (range: 27–56 years). Results: Six reasons for delays in seeking medical help were identified, including: (1) Being in denial of BC symptoms; (2) normalisation of BC symptoms attributed to hormonal changes, dietary changes, or work-induced stress; (3) misinterpretation of BC symptoms attributed to other diseases or expectation of more alarming/obvious BC symptoms; (4) pursuit of alternative medicine remedies; (5) false reassurance or incorrect advice from family members or friends; and (6) practical barriers, such as childcare responsibilities and lack of access to transport. Conclusion: Increased awareness of BC symptoms and a better understanding of Omani women's beliefs, cultures, and behaviours may help to reduce delays in BC presentation and diagnosis.

Intensive Care Medicine

1. **Zampieri FG, Damiani LP, Biondi RS, Freitas FG, Veiga VC, Figueiredo RC, Serpa-Neto A, de Oliveira Manoel AL, et al. Effects of balanced solution on short-term outcomes in traumatic brain injury patients: a secondary analysis of the BaSICS randomized trial. Rev Bras Ter Intensiva. 2022;34(4):410-417. 10.5935/0103-507X.20220261-en.**

   We included 483 patients (236 in the 0.9% saline arm and 247 in the balanced solution arm), with a total of 338 patients (70%) with a Glasgow coma scale score ≤ 12 were enrolled. There was a high probability that balanced solutions

were associated with high 90-day mortality and fewer days alive and free of intensive care units at 28 days.

2. **Oliveira Souza NV, Rouanet C, Solla DJF, de Lima CVB, de Souza CA, Rezende F, Alves MM, de Oliveira Manuel AL, Chaddad Neto F, Frudit M, Silva GS. The Role of VASOGRADE as a Simple Grading Scale to Predict Delayed Cerebral Ischemia and Functional Outcome After Aneurysmal Subarachnoid Hemorrhage. Neurocrit Care. 2022 Aug 24. doi:10.1007/s12028-022-01577-1. Epub ahead of print. PMID: 36002635.**

   We retrospectively evaluated a multiethnic cohort of consecutive patients with subarachnoid hemorrhage admitted to a high-volume center in Brazil from January 2016 to January 2019. A total of 212 patients (71.7% female, mean age 52.7 ± 12.8) were included. Sixty-nine patients were classified as VASOGRADE-Green (32.5%), 98 patients as VASOGRADE-Yellow (46.9%), and 45 patients as VASOGRADE-Red (20.6%). Delayed cerebral infarction (DCI) related infarction was present in 39 patients (18.9%). VASOGRADE-Yellow and VASOGRADE-Red were independently associated with DCI-related infarction and unfavorable outcome. Conversely, VASOGRADE-Green had an excellent specificity for predicting favorable outcome at discharge.

3. **Zampieri FG, Damiani LP, Biondi RS, Freitas FGR, Veiga VC, Figueiredo RC, Serpa-Neto A, Manoel ALO, Miranda TA, Corrêa TD, Azevedo LCP, Silva NB, Machado FR, Cavalcanti AB; BRICNet. Hierarchical endpoint analysis using win ratio in critical care: An exploration using the balanced solutions in intensive care study (BaSICS). J Crit Care. 2022 Jul 14;71:154113. doi:10.1016/j.jcrc.2022.154113. Epub ahead of print. PMID:35843046.**

   we reanalyzed the results of the Balanced Solutions in Intensive Care Study (BaSICS) through hierarchical endpoint analysis with win ratio. All patients with full data in BaSICS trial were elected for the analysis. BaSICS compared balanced solutions (Plasma Lye 148) versus 0.9% saline in critically ill patients requiring fluid challenge. A total of 10,490 patients were included in the analysis, resulting in 27,587,566 unique combinations for unstratified WR. Unstratified Win ratio was 1.02 (95% confidence interval 0.97; 1.07), which was similar to stratified WR. No stratum in the stratified analysis resulted in significant results. Subgroup analysis confirmed the possible harm of balanced solutions in traumatic brain injury patients (WR 0.80; 95% confidence interval 0.64; 0.99). In this reanalysis of BaSICS, a win ratio analysis largely replicated the results of the main trial, yielding neutral results

except for the subgroup of patients with traumatic brain injury where a signal of harm was found.

4. Zampieri FG, Machado FR, Biondi RS, Freitas FGR, Veiga VC, Figueiredo RC, Lovato WJ, Amêndola CP, Serpa-Neto A, Paranhos JLR, Lúcio EA, Oliveira-Júnior LC, Lisboa TC, Lacerda FH, Maia IS, Grion CMC, Assunção MSC, Manoel ALO, Corrêa TD, Guedes MAV, Azevedo LCP, Miranda TA, Damiani LP, Brandão da Silva N, Cavalcanti AB; BaSICS investigators and the BRICNet. Association Between Type of Fluid Received Prior to Enrollment, Type of Admission, and Effect of Balanced Crystalloid in Critically Ill Adults: A Secondary Exploratory Analysis of the Balanced Solutions in Intensive Care (BaSICS) Study. Am J Respir Crit Care Med. 2022 Mar 29. doi:10.1164/rccm.202111-2484OC. Epub ahead of print. PMID:35349397.

Secondary post-hoc analysis of the Balanced Solution in Intensive Care (BaSICS) trial, which compared a balanced solution to 0.9% saline in intensive care unit. 10,520 patients were included. There was a low probability that the balanced solution was associated with improved 90-day mortality in the whole trial population, however, probability of benefit was high for patients that received only balanced solutions before enrollment.