

LIA versus regional blocks were compared for their analgesia requirements in recovery, calculated as morphine equivalents. Patient controlled analgesia (PCA) use and length of stay (LOS) were also studied. Data was analysed using SPSS 22. **Results:** We collected 4020 data points. Forty-eight (23.9%) patients had regional blocks, 110 (54.7%) patients had LIA, 8 (4%) patients received both regional block and LIA and 35 (17.4%) patients received neither. Of the patients who had regional blocks, 70.8% (n=34) required parenteral analgesia in recovery compared to 42.7% (n=47) who had intraoperative LIA. The median opioid requirements (morphine equivalents) in PACU were 6.8 mg (regional, range 0-27) and 0 mg (LIA, 0-30) (p=0.061). **Conclusion:** LIA may provide superior analgesic effect compared to regional blocks in patients in the early post-operative period. This is a significant finding as effective analgesia is essential for early rehabilitation, associated with shorter LOS and better functional outcomes. Future randomised controlled trials investigating LIA are warranted.

Cortisol awakening response and its predictive value for transition and treatment response in psychosis: a systematic review and meta-analysis

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Background/Aims: Neuroendocrine abnormalities are frequently observed in patients with schizophrenia and are believed to interact with pathophysiological mechanisms of psychosis. Cortisol awakening response (CAR), the increase in cortisol secretion in response to waking up, is a standardised cortisol readout that shows strong associations with social and environmental risk factors of schizophrenia and with adverse physical health outcomes. Over the last few years an increasing number of studies has reported flattening of the CAR in patients at different stages of psychosis but this data has not been synthesised. **Methods:** We performed a systematic review and meta-analysis of studies reporting CAR in patients with schizophrenia, first episode psychosis or at risk states. A systematic search was performed using MEDLINE, PsychINFO and Embase and hand search of relevant reference lists. We include studies that either directly report CAR, or report awakening and 30 minute post-awakening cortisol levels that allow for calculation of AUCi. **Results:** Patients with schizophrenia show an attenuated CAR compared to healthy controls. Subset meta-analysis showed that CAR alterations are already present in patients with first episode psychosis and individuals in at-risk states. **Conclusion:** Despite the limited number of studies currently available, there is a clear trend for attenuated CAR in patients at different stages of psychosis. These distinctive alterations of the hypothalamic-pituitary-adrenal axis function appear to be already present in at-risk states. Few studies so far employed longitudinal designs and investigated the predictive value of CAR for transition from at risk states to first episode and for treatment response.

Emerging role of iron oxide nanoparticles in the diagnostic imaging of pancreatic cancer: a systematic review

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Background/Aims: Pancreatic cancer is the fourth most common cause of cancer-associated death worldwide, with a five-year survival rate less than

5%. The poor prognosis is mainly due to late presentation in 80% of patients and its drug resistant nature. Most diagnoses are made using contrast-enhanced computed tomography (CT) or magnetic resonance imaging (MRI), which have a limited sensitivity of 76-86%. Iron oxide nanoparticles are increasingly used in the diagnostic imaging of pancreatic cancer, due their ability to selectively target tumour cells thereby increasing image resolution. The aim of this study is to identify studies investigating the use of iron oxide nanoparticles in the diagnostic imaging of pancreatic cancer. **Methods:** A systematic review was performed using PubMed for records up to 2015. Search terms used included 'iron oxide nanoparticles', 'pancreatic cancer' and 'imaging'. **Results:** Sixteen studies were identified evaluating the use of iron oxide nanoparticles in the imaging of pancreatic cancer in vitro and in in-vivo animal models. Eight of these studies evaluated the use of superparamagnetic iron oxide nanoparticles (SPION), and showed SPION significantly decrease the T2 and T2* relaxation times of tumour tissue, providing a high sensitivity for MRI. Similar results were seen in eight studies that investigated the use of iron oxide nanoparticles conjugated to other molecules including gelatin, survivin, chemokine-receptor-4, silica-gold, endothelial growth factor receptor, urokinase receptor activator, Clostridium and a sonic-hedgehog target. **Conclusion:** Iron oxide nanoparticles in the form of SPION or conjugates are biocompatible and effective at targeting tumour cells and significantly attenuate MRI signals in T2-weighted images of pancreatic cancers from a range of cell lines.

Proton pump inhibitors and vitamin B₁₂ deficiency in older adults: a systematic review of clinical studies

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Background/Aims: Proton pump inhibitors (PPIs) are commonly prescribed in the clinical setting. Current evidence shows an association between PPI use and fractures, pneumonia and enteric infections, with inconclusive findings on PPI use leading to vitamin B₁₂ deficiency. This is particularly relevant in older adults as the physiological changes that occur with ageing predispose to illness and additional co-morbidities places older adults at greater risk of vitamin B₁₂ deficiency. The aim of this study is to determine whether long term use of PPIs in the older adult population is related to vitamin B₁₂ deficiency. **Methods:** A systematic review was conducted using PubMed, Embase and the Cochrane library from 1988 - 2015. Search terms used included: 'proton pump inhibitors', 'vitamin B₁₂ deficiency', 'cobalamin', 'clinical studies', 'elderly' and 'older adults'. **Results:** A total of seven studies were analysed, including one non-randomised controlled trial, one retrospective cohort study, two retrospective case-control studies, one cross-sectional study and two case reports. Four studies found an association between long term PPI use and vitamin B₁₂ deficiency and a retrospective case-control study showed no association. Both case reports showed an association between long term PPI use and vitamin B₁₂ deficiency. One case report demonstrated clinical manifestations of vitamin B₁₂ deficiency. **Conclusion:** Small scale clinical studies suggest that vitamin B₁₂ absorption is impaired in individuals on PPI therapy. This finding is supported by observational studies showing a reduction in vitamin B₁₂ levels associated with long-term PPI therapy in participants over 60 years. It is not known if this association has a significant clinical impact.