JOURNAL CLUB SUMMARIES

What's hot that the other lot got

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REDUCING EXPOSURE TO MEDICAL RADIATION IN EVALUATION OF SUSPECTED PULMONARY EMBOLISM (PE) IN PREGNANCY

PE presents a particular diagnostic challenge in pregnancy with no validated algorithm and lower utility of d-dimer testing. Furthermore, imaging modalities hold increased risk in terms of radiation exposure for mother and fetus. The YEARS algorithm for risk stratification in PE has been validated in non-pregnant patients and successfully reduces diagnostic imaging. Pol *et al* (NEJM 2019;380:1139) evaluated whether a pregnancy adapted version of this algorithm was safe and effective. Pregnant woman presenting with symptoms suggestive of PE to units across Europe were included in the study (n=498). Patients were evaluated using d-dimer and three clinical features (clinical signs of deep vein thrombosis (DVT), haemoptysis and clinician assessment that thrombosis was the most likely diagnosis). Those with clinical signs of a DVT went immediately for lower limb ultrasonography. Those without were stratified. If d-dimer was >1000 ng/mL, or if d-dimer was >500 ng/mL and one of the three clinical criteria were met, a CT pulmonary angiogram was performed; otherwise, DVT/PE was considered ruled out. Participants were followed up for 3 months. Using this algorithm, 20 patients (4%, 95% CI 2.6% to 6.1%) were diagnosed with DVT/PE at presentation. Of the patients stratified as low risk, one patient was diagnosed with a DVT during follow-up but none with PE. Use of the algorithm prevented CT imaging in 195 patients (39%, 95% CI 35% to 44%). The study demonstrates that using this algorithm to aid clinical decision making in suspected PE in pregnant patients is safe and reduces diagnostic imaging and thus radiation exposure. The subjective nature of the main criteria for investigation (PE being the most likely diagnosis) and the low rate of DVT/PE suggest that attempts to obtain objective tools to improve diagnostic accuracy and to reduce radiation exposure should continue.

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ONGOING UNCERTAINTY OF POTENTIAL OF ACE INHIBITOR (ACEI) IN IDIOPATHIC PULMONARY FIBROSIS (IPF)

There is evidence that angiotensin peptides may play a role in the pathogenesis of IPF. Patients with IPF commonly take ACEi and angiotensin II receptor blocker (ARB) drugs for unrelated conditions, but the effect on their disease trajectory is unknown. Kruter *et al* (CHEST 2019, doi.org/10.1016/j.chest.2019.04.015) examined the relationship between IPF progression and use of ACEi and ARBs using post hoc analysis of pooled data from the placebo arm of the ASCEND (Assessment of pirfenidone to confirm efficacy and safety in idiopathic pulmonary fibrosis) and CAPACITY (Clinical studies assessing pirfenidone in idiopathic pulmonary fibrosis: research of efficacy and safety outcomes) trials. Outcomes of 624 patients were assessed (111 on ACE 121 on an ARB and 392 on neither). The primary outcome was a composite endpoint of IPF disease progression, defined as first occurrence of absolute decline in percentage predicted FVC of >10%, decline in 6 min walk distance of >50 m, or death from any cause within 12 months. Disease progression was lower in patients receiving ACEi compared with ARB or neither therapy (32.4%, 40.5% and 43.4%, respectively). Multivariate analysis showed ACEi use was associated with lower risk of progression (p=0.026), but not ARB use (p=0.413). Paradoxically, a higher mortality risk was observed in patients who underwent ARB therapy compared with the control group (11.6% vs 4.8%, p=0.013) but not in the ACEi group (p=0.782). The study data add to the uncertainty in this area as to the potential role of angiotensin and blockade of its pathway in the progression of IPF and raise caution about extending any findings between drug classes.

ARTIFICIAL INTELLIGENCE (AI) OUTPERFORMS PULMONOLOGISTS IN THE INTERPRETATION OF PULMONARY FUNCTION TESTS (PFTS)

AI has been studied in a range of medical settings. Topalovic *et al* (Eur Respir J 2019; 53: 1801660) evaluated the use of an AI-based software system in the interpretation of PFTs, comparing its accuracy to that of respiratory physicians. PFTs and clinical synopsis from 50 patients were independently evaluated by 120 respiratory physicians and a bespoke AI system. They were asked to provide pattern interpretation (obstructive and restrictive) and diagnosis from a predefined list. American Thoracic Society/European Respiratory Society guidelines were used as the gold standard for pattern interpretation, and a panel of experts with access to all relevant history and tests for each case provided the gold standard diagnosis. The physician group matched the reference PFT pattern in 74.4%±5.9% and diagnosis in 44.6%±8.7%. There was considerable inter-rater variability in both assessments. The AI system correctly identified the pattern of PFTs in 100% of cases and diagnostic category in 82% of cases, performing significantly better than the physician group (p<0.0001). The study suggests that there may be a need for greater emphasis on PFT interpretation in respiratory physician training and that AI could be used to improve and standardise PFT interpretation in clinical practice.

YOUTUBE VIDEOS PROVIDE POOR QUALITY INFORMATION TO PATIENTS WITH IPF

The internet is an increasingly important source of information for patients. YouTube is a potentially powerful platform for education, but a lack of regulation and wide variation in the quality of content might hinder this. Goobie *et al* (AnnalsATS, 2019;16;572) reviewed the quality of YouTube videos providing patient education in IPF. A total of 102 videos were analysed by two adjudicators. They assessed specific IPF-related content,using a scoring system based on current clinical guidelines, and the general quality and reliability of information provided using validated scoring systems (HONCode and DISCERN). Videos covered a median of 17% (7% to 27%) of the identified IPF-specific points. Seventeen per cent of videos covered non-recommended treatments, including long-term steroids, n-acetylcysteine, interferon, stem cells, enzyme supplements, cannabis oil and continuous positive airway pressure (CPAP). There were 10% of videos that advertised specific products, some of which claimed to be a 'cure' for IPF. Quality scores were

generally poor: only 7% of videos had high HonCode scores, and the mean DISCERN score was 2 or less. Worryingly videos with lower quality ratings were more likely to have higher user engagement (liked, disliked and posted comments) and thus be more visible on the website. Videos from industry or for profit organisations scored lower than those from medical organisations for both content (p=0.002) and quality (HONCode p=0.002, DISCERN p<0.001). This study demonstrates that much of the patient-directed information on IPF found on YouTube is of low quality and highlights the need for clinicians to guide patients towards trusted sources, as well as a need to push for more rigorous standards and regulation in health-related internet content.

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