Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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1 Viridans group streptococcal bacteraemia: species specific infection association, a 5 year retrospective cohort analysis

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Abstract

Introduction: Viridans group streptococci (VGS) comprise a heterogenous group of bacteria which colonise the oral, gastrointestinal, and genitourinary tracts. Different species have unique disease associations and can represent blood culture contamination. Determining the significance of VGS bacteraemia and need for further investigation and treatment remains a challenge.

Methods: VGS from blood cultures taken from patients aged 16 years and older between 01/01/2016 and 31/12/2020 in NHS Greater Glasgow and Clyde were identified from laboratory information management system (LIMS) (n = 1252). Patient-infection events were determined by review of LIMS / electronic patient records (n = 1031). Diagnosis of native-valve (NVE) and prosthetic-valve endocarditis (PVE), non-endocarditis infection, or blood culture contamination was determined from clinical records. The frequency of each scenario was calculated for VGS species.

Results: 49 (4.75%) cases of NVE and 30 (2.9%) cases of PVE were detected. Prevalence of endocarditis was 5% from organisms in the S. anginosus group, 7% in the S. mitis group, 13% in the S. sanguinis group, and 21% in the S bovis group. Non-endocarditis infection was seen in 275 (26.67%) episodes, most commonly caused by organisms in the S. anginosus group. 666 (64.5%) positive blood cultures represented oropharyngeal contamination. 1 episode of presumed contamination was subsequently determined to represent endocarditis.

Discussion: Good understanding of the biology of individual VGS species are key in correctly approaching and investigating VGS detected in blood culture. The risk of NVE/PVE and non-endocarditis infection varies significantly within and between VGS groups and understanding of this may help the development of investigative pathways.

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2 Tuberculosis-associated immune reconstitution inflammatory syndrome management

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Abstract

Background: Tuberculosis-associated immune reconstitution inflammatory syndrome (IRIS) has been described in both HIV-positive and HIV-negative patients, and can be fatal. Corticosteroids have been used in the treatment of TB-IRIS, but not always successfully, as many cases are corticosteroid-refractory and long-term therapy has multiple side effects. As there are no official management guidelines, other therapeutic options need to be identified.

Aims: The aims of this review are to identify studies supporting the use of immunotherapy, host-directed therapies (HDT), or corticotherapy in TB-IRIS management.

Methods: A systematic literature review of studies describing TB-IRIS management has been conducted, limited to the English language. Case reports, case series, observational studies and randomized controlled trials were included.

Results: 232 articles describing 974 patients (909 adults and 65 children) were selected from 3100 reports. HDT and immunotherapy types have been identified in 377 patients (354 adults and 23 children) described in 63 papers. These include: corticosteroids, tumor necrosis factor-α antagonists, thalidomide, lenalidomide, interleukin-1 receptor antagonists, interleukin-2, vascular endothelial growth factor inhibitors, various immunosuppressant and antineoplastic drugs, chloroquine derivatives, montelukast, pentoxifylline, paracetamol and non-steroidal anti-inflammatory drugs. Corticotherapy only for TB-IRIS was identified in 96 papers describing HIV-negative patients, and 89 papers describing HIV-positive patients.

Conclusion: More evidence is needed to support the management of TB-IRIS, to evaluate the efficiency and safety profile of HDT and immunotherapy in this context.

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3 Outcomes of Tuberculosis contact tracing and predictors of success: a 10-year retrospective cohort analysis

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Abstract

Background: The Covid-19 pandemic risks disruption to diagnosis and treatment of Tuberculosis (TB) globally, jeopardising the 2035 eradication target. Between 1990-2010 40.9% of contacts did not complete Tuberculosis (TB) contact screening in Birmingham, UK. Understanding screening outcome success is urgently needed to guide future resource allocation.

Aim: To evaluate changes made to TB screening since 2010. To identify predictors of contact screening non-completion, and of screening outcomes.
Methods: A retrospective cohort analysis of all index and contact patients in Birmingham between 2011-2020, with separation of Covid-19 data, and stratification of contacts by Pulmonary TB (PTB) or Extra-Pulmonary TB (EPTB) index infection. Univariate and multiple logistic regression models were used to identify predictors of screening completion and clinical outcome.
Results: 3,255 index cases and 27,820 contacts were identified. Screening non-completion has improved from 40.9% of contacts to 25% since 2010. Contacts were less likely to complete screening if they were >65 years (P = 0.001) had no BCG (P < 0.001), were male (P < 0.001 PTB, P = 0.02 EPTB), had had TB themselves (P < 0.001 PTB, P = 0.025 EPTB), were a close contact (P < 0.001), or were from the Indian subcontinent (PTB only, P = 0.019). Contacts were significantly more likely to require treatment for TB if they were born outside the UK (P < 0.001), were <65 years (P < 0.001 PTB, P = 0.01 EPTB), if they were male, close contacts, or of Black ethnicity (all P = 0.001, PTB only).
Conclusions: Changes to contact screening since 2010 have substantially improved screening completion rates. Significant predictors of screening non-completion exist, which warrant further investigation and targeted screening support.

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4 Diabetes mellitus is not a driver of poor Tuberculosis treatment outcomes in a UK cohort

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Abstract
Introduction: The effect of diabetes mellitus (DM) on active tuberculosis (TB) treatment outcomes currently remains unclear.
Methods: Retrospective observational cohort study of all notified TB cases from Northwick Park Hospital over a five-year period. World Health Organization criteria were used to define TB treatment outcomes.
Results: TB was microbiologically confirmed in 64.3% of cases (539/838). The prevalence of DM at TB treatment initiation was 15% (126/838). Most DM patients (83.3%, 105/126) were on hypoglycaemic treatment and well-controlled (median glycated haemoglobin HbA1c 53.5mmol/mol). DM patients were older and more likely to be of Asian ethnicity. They had a higher pre-treatment weight but were less likely to gain weight during treatment. Time from presentation to treatment initiation was longer (median 87.5 vs 63 days, p < 0.001), while they were significantly more comorbid (median Charlson Comorbidity Index 3 vs 0, p < 0.001). Overall, favorable treatment outcomes were recorded for 89.5% of patients (87.7% vs 89.8% for DM and non-DM patients respectively, p = 0.52). In multivariable analysis, neither DM (odds ratio 0.49, 95% confidence intervals 0.23 – 1.04, p = 0.06), nor poorly-controlled DM (odds ratio 0.93, 95% confidence intervals 0.12 – 7.29, p = 0.95) were associated with unfavorable TB treatment outcomes. Independent predictors of unfavorable outcome included age, lung cavitation, chronic neurological disease, and the presence of a malignant neoplasm.
Discussion: In a well-resourced setting, with predominantly well-controlled diabetes patients on treatment, DM was not an independent predictor of unfavorable TB treatment outcomes.

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5 A case of recurrent meningitis: establishing the (w)hole picture...

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Abstract
Context: This case of recurrent meningitis explores an unusual aetiology and clinical considerations for patients presenting with Invasive Pneumococcal Disease (IPD) in the post-vaccine era.
Case: An 8 year old female, with a complete vaccination history and no chronic conditions presented to ED with a headache, fever and vomiting. Clinical examination showed evidence of meningism. A lumbar puncture was performed and CSF examination showed WCC 952 with predominant neutrophils. CSF culture grew streptococcus pneumoniae. This child was treated with IV ceftriaxone and showed good response. Later, it transpired that she had a similar presentation 2 years prior, with the same organism isolated in CSF, bringing some interest to what initially seemed a straightforward case of pneumococcal meningitis.

Extensive work-up was undertaken for immunodeficiency as a predisposing aetiology for recurrent meningitis. Serum immunoglobulins and C3/4 were in the normal range. Functional antibodies for pneumococcus showed satisfactory response to vaccination. An ultrasound abdomen showed normal appearances of the spleen.

Neuroimaging was undertaken which showed a discontinuation of the cribriform plate, identifiying CSF breach as the cause for recurrent pneumococcal meningitis. This child underwent endoscopic repair of this defect.
Lessons: Assessment of patients of any age with pneumococcal meningitis requires thorough history to identify previous episodes, or signs/symptoms of CSF leak, as well as immunodeficiency work-up in any vaccinated child with IPD.

Cranial imaging is critical in those with recurrent episodes or a high risk history for CSF leak as up to 59% of cases are due to an underlying anatomical defect[1].

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6 A mouthful keeps you going for half a day

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Abstract
A 41 year old man with Type 2 diabetes presented with a 10 week history of fevers, drenching night sweats, arthralgia of the left hip and knee and 7kg weight loss. 18 months prior to presentation he had spent 1 month visiting family in Hargeisa, Somaliland. On examination, temperature was 39 degrees Celsius, pulse 105 beats per minute and blood pressure 112/71 mmHg. Examination was otherwise normal. Investigations revealed: platelets 51, white cell count 3.8 (neutrophils 1.3), ALT 74, C-reactive protein 38.8[PP1] . Malaria film and HIV test were negative. Chest radiograph was normal and computed tomography revealed moderate splenomegaly. On day 3, blood cultures taken on admission

[1] https://pubmed.ncbi.nlm.nih.gov/18625686/