

Clinical round up

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Swabs for NAAT and culture

The rise of gonococcal resistance (particularly to extended-spectrum cephalosporins) poses an increasing problem for testing. Wind et al¹ looks at the use of ESure swabs for Gonorrhoea testing. A NAAT to diagnose gonorrhoea combined with a way to defer culture of positive samples would be useful but needs a specialised collection medium to enable *N.gonorrhoea* to survive and maintain diagnostic sensitivity. The ESwab system (Copan, Italy) is known to prolong survival of other bacterial species. Wind et al hypothesised that ESwabs could be used for deferred gonorrhoea culture and aimed to determine: 1) if culture was possible 3 days after storing samples and 2) would ESwab NAAT testing result in any loss of diagnostic sensitivity. 2452 samples were taken from 1893 high risk patients (symptomatic, MSM or STI contacts) attending a sexual health clinic. In men a direct GC culture, and first void urine or rectal NAAT (in MSM) were taken. In women cervical or rectal swabs NAATs were sent. Single ESwab samples were taken from each anatomical site for each patient except for urine samples where flocculated ESwabs were dipped into first pass urine within 30 minutes of collection. NAAT samples were taken first followed by ESure for the first half of the study and then reversed. Direct urethral sampling of either sample was against clinic policy at the study site. The ESwab NAAT was less sensitive (83%; 95% CI 75-90%) than the Aptima combo NAAT for GC and ESwabs were more sensitive for those patients with symptoms vs asymptomatic ($p=0.001$). For CT ESwab NAAT sensitivity was 87% (95% CI 82-90%) with 6 positive on ESwab but

negative on Aptima combo. Culture results were less successful in asymptomatic patients compared to symptomatic (OR 4.80 95% CI 1.92-12.01 p=0.001) and with rectal samples vs urethral samples (OR 2.07 95% CI 0.78-5.48 p=0.28). Culture results were best when plated out at ≤ 3 days after sampling (87% positivity in symptomatics). The authors conclude that ESwab GC culture to 3 days is possible and the reduction in sensitivity can be explained by the degradation of samples over time. Culture was best from patients with urogenital symptoms. For this method to be practicable NAAT results should be available within 3 days. However ESwabs may be useful where direct culture poses a challenge e.g. those outreach settings.

Extended post-exposure prophylaxis for breastfed infants

Nagot et al² conducted this randomised controlled study at 4 sites in Africa looking at the use of antiretroviral (ART) therapy for infant post-exposure prophylaxis (PEP) for > 6 months and compared the use of twice daily Lamivudine (3TC) versus Lopinovir/ritonavir (LPV/r). HIV negative infants born to HIV positive mothers who any received any PMTCT (usually Zidovudine (AZT) from 28 weeks of pregnancy until a week after delivery) but were not eligible for ongoing ART as their CD4 count was > 350, and who had received Nevirapine for the first 7 days of life were randomised 1:1 to receive 3TC or LPV/r for up to 1 week after breastfeeding ceased or up to 50 weeks. The primary outcome was infant HIV infection between 7 days to 50 weeks. 17 HIV infections occurred in 1236 infants (ITT analysis), 8 in the LPV/r arm (cumulative risk 1.4% 95% CI 0.4-2.5) and 9 in the 3TC arm cumulative risk 1.5% (CI 0.7-2.5) with a hazard ratio between arms of 0.90 95% CI 0.35-2.34 p=0.83. 8 infections occurred after 6 months of breastfeeding and 2 occurred because

breastfeeding had not completely stopped. They found that the two regimens are equally effective and have similar rates of side effects but that adherence plays a role in transmission risk and there is a benefit to continuing infant PEP for the duration of breastfeeding.

Investment in infectious diseases research

Head and colleagues looked, in this interesting paper, at the funding awarded to UK institutions for research into HIV, TB and malaria from 1997-2010. They assessed investment from 585 awarding bodies and analysed publication and citation rates for these 3 areas. An 'investment by publication' metric was generated, and an 'investment by citation' metric was developed as a measure of the 'usefulness' of research. 17,271 publications were included (9322 for HIV, 4451 for malaria and 3498 for TB). TB research was most productive for investors; cost per publication £50,691 (HIV £61,971 and malaria £94,483). £1,797 was spent per citation for TB (lowest). Overall pre-clinical science received the most funding, public health came out as the most productive for HIV and TB, but phase I-III trials were the most productive for malaria. The authors comment that they had only looked at this snapshot of publicly funded research and that further work is ongoing. The actual figures involved were of interest and highlights the responsibility we have to use funds widely and disseminate findings.

References

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