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EDUCATION

From the Journals: Important excerpts from other main journals

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How helpful is active monitoring for favourable-risk prostate cancer?

Do patients with favourable-risk prostate cancer suffer disease progression while on active surveillance? A North American multicentre prospective cohort study, the Canary Prostate Active Surveillance Study (PASS), with a 10-year follow-up, answered this question. It involved 2,155 patients with a median age of 63 years and localised prostate cancer (grade 1 with a mean PSA of 5.2 ng/mL) with no prior treatment. A total of 83% were white and 7% were black. Ten years after diagnosis, the incidence of biopsy grade reclassification and treatment were 43 and 49%, respectively. At 10 years, the rate of metastasis was 1.4%, prostate-cancer specific mortality was 0.1%, and overall mortality in the same period was 5.1%. Subsequent disease progression and treatment during active surveillance were not associated with worse outcomes. This showed that active surveillance is an effective strategy for avoiding overtreatment in patients with localised prostate cancer.

JAMA https://doi.org/10.1001/jama.2024.6695

Hydroxyurea in sickle cell disease, balancing clinical response and toxicity

In a bid to improve the health of children with sickle cell anaemia in sub-Saharan Africa, the Realizing Effectiveness Across Continents with Hydroxyurea (REACH) clinical trial assessed if there was a relationship between dosing, clinical response and toxicity of hydroxyurea. The REACH is an open-labelled, non-randomised phase 1/2 trial involving 606 children with sickle cell anaemia from Kenya, Ugandan, Angola and DRC. The children were 1–10 years old, with HbSS, HbSβzero thalassaemia. They received a fixed dose of 17.5 mg/kg/day of hyroxyurea for 6 months, then 6 months of dose escalation, 2.5–5.0 mg/kg increments every 8 weeks to a maximum tolerated dose (mild myelosuppression; MTD) of 20–25 mg/kg/day. After MTD was reached, hydroxyurea dosing was then optimised. Eighty-six per cent of children received treatment for a median of 93 months with a median dose of 28.2 mg/kg/day with an increased mean Hb concentration from 7.2 at baseline to 8.5 g/dL, and mean foetal Hb level 10.9 to 23.3%. Grade 3 and 4 adverse events were infrequent (18.5 per 100 patient-years) with no treatment-related deaths. Despite hydroxyurea's effectiveness at high doses, active laboratory and clinical monitoring of patients is important during treatment.

Lancet Haematology https://doi.org/10.1016/S2352-3026(24)00078-4

Are digital follow-up pathways in low-resource environments feasible?

Telemedicine has revolutionised the practice of medicine. This multicentre, international prospective, non-randomised cohort study exploring the feasibility and accuracy of remote follow-up pathways for surgical site infection (SSI) assessment. It was embedded in another study looking at skin preparation and antimicrobial sutures in preventing SSIs after abdominal surgery in 5,788 patients in 54 hospitals in seven in low- and middle-income countries (LMICs). This part of the study included 1,209 patients in its analyses and it tested a telephone administered Bluebell Wound Healing Questionnaire (WHQ) adapted for use in LMIC to diagnose SSI after abdominal surgery. The WHQ had been validated in the UK and it demonstrated good reliability and high sensitivity and specificity when discriminating between SSI and no SSI in comparison with an in-person US CDS assessment. A total of 17.5% patients had SSI diagnosed with 30 days of surgery. Telephone contact was made in 90.3% of patients, but the rate dropped off the further away from the operation was. A total of 531 (47.5%) patients had an in-person follow-up with SSI prevalence of 19.6, sensitivity of 0.63 and an accuracy of 0.84. The WHQ discriminated between most patients with and without SSI. It was concluded that it was suitable for use across a diverse range of settings with high completion and low missing data rates.

British Journal of Surgery. https://doi.org/10.1093/bjs/znad446

The interaction between public health interventions and health inequalities: a case for Human papilloma virus vaccination

A structured public health intervention not only improves health but also reduces health inequalities. This was

shown in a population-based observational study that assessed the effect of the HPV vaccination programme on the incidence of cervical cancer and grade 3 cervical intraepithelial neoplasia (CIN3) by socioeconomic deprivation in England. The HPV vaccination was introduced nationally in 2008 and was offered routinely to girls aged 12–13 years. Between January 2006 and June 2020, 29,968 women aged 20–64 were diagnosed with cervical cancer and 335,228 with CIN3. The adjusted age standardised incidence of cervical cancer and CIN3 were, respectively, 83.9 and 94.3% lower in the group who were vaccinated compared to the unvaccinated group. By mid-2020, HPV vaccination had prevented an estimated 687 cervical cancers and 23,192 CIN3s. While the highest rates remained amongst women in the most deprived area, the vaccination programme had a large effect in all five levels of deprivation especially in women who were offered routine vaccination.

BMJ https://doi.org/10.1136/bmj-2023-077341

The use of artificial intelligence (AI) in predicting emergency department revist after hospital discharge

Revist to emergency departments (EDs) is a quality indicator with revisit rates >5% reflecting poor quality of care, and <1% indicating undue risk aversion. A 3-year retrospective cohort study from Taiwan aimed to predict high-risk revisit after index discharge within 72 h with a machine-learning (ML) approach. Between January 2019 and December 2021, 7,600 patients revisited after index discharges, and after exclusions, 6,282 patients were analysed. A total of 151 features were collected, cleaned and validated, and eventually a total of 79 features were used. A total of 80% patients were put in a training set and 20% in a testing set. The ML model used included deep learning, random forest, extreme gradient boost (XGBoost) and stacked ensemble. The stacked ensemble algorithm demonstrated superior predictive performance compared with other artificial intelligence (AI) models, achieving an area under the receiver operating characteristic curve value of 0.82. All AI models outperformed the traditional logistic regression model in terms of predictive accuracy. The leading features were age, systolic blood pressure and heart rate in the index ED visit. The ML was used to predict high risk ED revist but the authors acknowledged that this was in a single institution and external validation is essential.

BMJ Health & Care Informatics https://doi.org/10.1136/bmjhci-2023-100859

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