General

Hydrocortisone plus fludrocortisone for community-acquired pneumonia-related septic shock

Despite the prevailing controversies, accumulating evidence supports the role of glucocorticoids in patients hospitalized for community-acquired pneumonia (CAP). Researchers in this subgroup analysis for the APROCCHSS trial compared hydrocortisone plus fludrocortisone between CAP and non-CAP-related septic shock. The primary endpoint was 90-day all-cause mortality. In the 562 participants that had CAP randomized in a 1:1 ratio to either corticosteroid or placebo, the primary outcome occurred in fewer participants in the intervention arm (39%) compared to placebo (51%), OR 0.60 (95% CI 0.43-0.83). There was no difference in the primary outcomes in the 648 non-CAP group between corticosteroid and placebo arms. The researchers concluded that hydrocortisone plus fludrocortisone reduced mortality compared to placebo, but no similar effect was seen in the non-CAP subgroup.

Reference

Heming, N., et al. (2024). Hydrocortisone plus fludrocortisone for community-acquired pneumonia-related septic shock: a subgroup analysis of the APROCCHSS phase 3 randomized trial. The Lancet Respiratory Medicine.

Individualized, short-course antibiotic treatment versus usual long-course treatment for ventilator-associated pneumonia.

Ventilator-associated pneumonia is associated with excessive antibiotic use among other adversities compared to other forms of pneumonia. In this phase IV clinical trial, researchers determined if an individualized, short-course antibiotic treatment strategy (≤ 7 days) was non-inferior to usual care (≥8 days). The primary outcome measure was a 60-day composite of death or pneumonia recurrence. A total of 460 participants were included and randomized in a 1:1 ratio. Median antibiotic treatment duration was 6 days in the short-course group and 14 days in the usual care group. The primary outcome occurred in 95 (41%) in the short-course group compared to 44% in the usual care group. Antibiotic side effects were higher in the usual care arm compared to the shorter course (risk difference -31%). The researchers hence found the shorter-course antibiotic treatment strategy to be non-inferior with fewer safety issues.

Reference

Mo, Y., et al. (2024). Individualized, short-course antibiotic treatment versus usual long-course treatment for ventilator-associated pneumonia (REGARD-VAP): a multicentre, individually randomized, open-label, non-inferiority trial. The Lancet Respiratory Medicine, 0(0).

10-day versus 14-day bismuth quadruple therapy for first-line eradication of Helicobacter pylori infection

According to several guidelines, bismuth quadruple therapy is the first-line helicobacter pylori eradication therapy, but the optimal duration of therapy is unclear. In this study, researchers compared a 10-day (PBMT-10) to a 14-day course of therapy (PBMT-14). A total of 313 H.pylori treatment patients were enrolled and randomly assigned to either group in a 1:1 ratio. The primary outcome was eradication rates. The researchers found the 10-day course to have similar eradication rates i.e. 92.4% versus 92.9% on intention-to-treat and 97.9% and 99.3% per protocol analyses. Overall adverse effects were similar but with less dizziness and vomiting in the 10-day course. The researchers thus concluded that the 10-day course is non-inferior to the 14-day bismuth therapy course, with fewer side effects.

Reference

Yang, E. H., et al. (2024). 10-Day versus 14-day bismuth quadruple therapy for first-line eradication of Helicobacter pylori infection: a randomized, open-label, non-inferiority trial. EClinicalMedicine, 70.

Ciprofloxacin prescription and non-susceptibility in Salmonella Typhi in Blantyre, Malawi

Emergency of Salmonella Typhi resistant to ciprofloxacin, the first-line for treating typhoid fever, is a major public health threat. Researchers in this study determined the association between ciprofloxacin prescriptions and S. Typhi quinolone resistance. This large study conducted in Malawi included data on blood cultures collected at Queen Elizabeth Central Hospital and from STRATAA and TyVAC studies. The study demonstrated a surge in ciprofloxacin prescriptions was related to a rise in typhoid fever cases (whole genome-sequencing-confirmed) from 4 (2%) to 6 (33%) cases, and that every additional prescription of ciprofloxacin in the preceding month was associated with a 4.2% increase in the relative risk of isolating a quinolone-resistance mutation. The researchers recommended improvement in typhoid fever diagnostics and the use of efficacious vaccines to curb S. Typhi resistance.

Reference

Ashton, P. M., et al. (2024). Evaluating the relationship between ciprofloxacin prescription and non-susceptibility in Salmonella Typhi in Blantyre, Malawi: an observational study. The Lancet Microbe, 5(3), e226–e234.

Pharmacokinetics of single-dose doxycycline in the rectum, vagina, and urethra

Doxycycline has been previously shown to reduce STIs among men who have sex with men, but data among women remains scanty. This study determined drug concentrations at different sites of STI exposure to inform STI prevention. Twenty participants were enrolled and given a single oral dose of doxycycline 200mg. Drug pharmacokinetics were determined in blood and urine and on rectal and vaginal swabs collected at different time points. The researchers found that doxycycline concentrations 3 days after dosing were twice the plasma levels and remained above minimum inhibitory concentrations for at least four, three, and two days for Chlamydia trachomatis, Treponema pallidum, and tetracycline-sensitive Neisseria gonorrhoeae, respectively. The researchers concluded that doxycycline efficiently distributes to the rectum, vagina, and urethra supporting its efficacy in STI prevention.

Reference
Haaland, R. E., et al. (2024). Pharmacokinetics of single-dose doxycycline in the rectum, vagina, and urethra: implications for prevention of bacterial sexually transmitted infections. EBioMedicine, 101..

Long-term risks of respiratory diseases in patients infected with SARS-CoV-2

Respiratory sequelae following SARS-CoV-2 are not well studied. In this study, researchers determined if COVID-19 increases the long-term risk of respiratory conditions. Using a UK Biobank database, 3 cohorts were built including a COVID-19 cohort (112,311 participants), a contemporary control (359,671 participants), and a historical cohort (370,979 participants). After a median follow-up of 0.8 years, the study found that compared to the contemporary control, COVID-19 participants had an increased risk of respiratory diseases i.e asthma HR 1.49, bronchiectasis HR 1.30, COPD HR 1.59, Interstitial lung disease 1.80 among others. The risk was higher among COVID-19-reinfected patients. Similar findings were found in the historical cohort. The researchers concluded that COVID-19 increases the risk of developing respiratory disease, with risk increasing with disease severity and reinfection.

Reference
Meng, M., et al. (2024). Long-term risks of respiratory diseases in patients infected with SARS-CoV-2: a longitudinal, population-based cohort study. EClinicalMedicine, 69.

Semaglutide and Cardiovascular Outcomes in Obesity without Diabetes

Semaglutide, a glucagon-like peptide-1 receptor agonist reduces the risk of adverse cardiovascular events in diabetes. Whether it can reduce cardiovascular risk in overweight and obese patients without diabetes is unclear. In this randomized placebo-controlled trial,17,604 adult patients ≥45 years with a body mass index ≥ 27 but no diabetes history were enrolled and randomized in a 1:1 to receive 2.4 mg once-weekly semaglutide or placebo. The primary outcome was a composite of death from cardiovascular causes, nonfatal myocardial infarction, or stroke. After a mean follow-up of 39.8±9.4 months, the primary outcome occurred less in the semaglutide group compared to placebo i.e. 6.5% versus 8.0% (hazard ratio, 0.80, P<0.001). The researchers concluded that semaglutide is superior to placebo in reducing cardiovascular events in non-diabetic overweight patients.

Reference
Lincoff, A. M., et al. (2023). Semaglutide and Cardiovascular Outcomes in Obesity without Diabetes. New England Journal of Medicine.

Dual Antiplatelet Treatment up to 72 Hours after Ischemic Stroke

Dual antiplatelet therapy (DAPT) lowers the risk of recurrent stroke when started early (≤ 24 hours). Whether administration later but within 72 hours is still beneficial isn't clear. In this double-blinded, placebo-controlled trial, 6100 patients with mild ischemic stroke or high-risk transient ischemic attack (TIA) were randomly assigned in a 1:1 ratio to either receive clopidogrel and aspirin or placebo and aspirin alone, within 72 hours. The primary efficacy and safety outcomes were new stroke, and moderate-to-severe bleeding within 90 days respectively. The primary efficacy outcome happened in 7.3% of the dual anti-platelet group compared to 9.2% in the aspirin-only group (HR 0.79), at the expense of low but higher moderate-to-severe bleeding risk, HR 2.08.

Reference
Gao, Y., et al. (2023). Dual Antiplatelet Treatment up to 72 Hours after Ischemic Stroke. New England Journal of Medicine, 389(26), 2413–2424.

Tenecteplase for Stroke at 4.5 to 24 Hours with Perfusion-Imaging Selection

Tenectaplase is beneficial in ischemic stroke when administered within 4.5 hours of stroke onset. Whether opening this window up to 24 hours is beneficial is still unclear. Researchers in this trial enrolled 458 adults with occlusion in the internal carotid or middle cerebral artery and salvageable tissue on perfusion imaging and assigned them in a 1:1 ratio to receive tenectaplase or placebo at 4.5 to 24 hours of last seen normal. Three-quarters of participants also underwent endovascular thrombectomy. The primary outcome was the ordinal score on the modified Rankin scale (mRS). At 90 days, the median mRS in both groups was similar. Mortality at 90 days was also not appreciably different between groups. The authors concluded that tenecteplase didn't confer a favorable functional outcome.

Reference
Albers, G. W., et al. (2024). Tenecteplase for Stroke at 4.5 to 24 Hours with Perfusion-Imaging Selection. New England Journal of Medicine, 390(8), 701–711.

Long-term benefits of dapagliflozin on renal outcomes of type 2 diabetes under routine care

Patients with type 2 diabetes (T2DM) remain at greatest risk of end-stage kidney disease. Sodium-glucose co-transporter-2 (SGLT2) inhibitors including dapagliflozin have been shown to have renal benefits but their long-term impact isn't well known. In this study, two cohorts were matched i.e. a dapagliflozin group and a comparator, each composed of 6197 T2DM patients. Comparisons were made in the change in estimated glomerular filtration rate (eGFR), among other renal outcomes from baseline to end of observation. The researchers found that after a mean of 2.5 years of follow-up, eGFR declined less in the dapagliflozin group than the comparator i.e. by 1.8 ml/min/1.73m2. Similar trends were also seen in the other renal outcomes. The researchers concluded that initiating dapagliflozin improves kidney function outcomes in patients with T2DM.

Reference
Fadini, G. P., et al. (2024). Long-term benefits of dapagliflozin on renal outcomes of type 2 diabetes under routine care: a comparative effectiveness study on propensity score matched cohorts at low renal risk. The Lancet Regional Health - Europe, 38, 100847.

Efficacy and effectiveness of antipsychotics in schizophrenia

TTreatment outcomes of schizophrenia may vary between clinical trials and real-world settings. The researchers conducted meta-analyses comparing the efficacy and effectiveness of antipsychotics for relapse prevention (within 6 months post-antipsychotic initiation) using both randomized clinical trials (RCT) and real-world data (Swedish and Finnish national registries), including 10,091 and 90,469 individuals respectively. The researchers found efficacy in RCTs was larger than effectiveness in the real world (HR ratio 2·58). Real-world network meta-analysis showed clozapine as the most effective, followed by olanzapine long-acting injectable (LAI). RCT data was inconsistent. In a combined meta-analysis, olanzapine was the most efficacious antipsychotic. The researchers concluded that RCTs may overestimate the treatment effectiveness of antipsychotics and that LAIs seemed to do better in real-world settings than RCTs..

Reference

Efthimiou, O., et al. (2024). Efficacy and effectiveness of antipsychotics in schizophrenia: network meta-analyses combining evidence from randomized controlled trials and real-world data. The Lancet Psychiatry, 11(2), 102–111.

Morphine for treatment of cough in idiopathic pulmonary fibrosis

Idiopathic pulmonary fibrosis (IPF) is a progressive lung disease with no proven treatments at the moment. Researchers in this double-blinded, placebo-controlled-cross-over study determined if morphine was beneficial as an antitussive. Forty-four patients with IPF diagnosed within 5 years with cough lasting >8 weeks were randomized (1:1) to receive placebo or controlled-release morphine 5 mg orally twice daily for 14 days followed by crossover after a week's washout period. The outcome measure was a change in objective awake cough frequency on day 14. The researchers noted that morphine reduced objective awake cough frequency by almost 40% compared with placebo, at the expense of increased adverse events (40% versus 14%). They thus concluded morphine is promising as a potential cough remedy for IPF.

Reference

Wu, Z., et al. (2024). Morphine for treatment of cough in idiopathic pulmonary fibrosis (PACIFY COUGH): a prospective, multicentre, randomized, double-blind, placebo-controlled, two-way crossover trial. The Lancet Respiratory Medicine, 12(4), 273–280.

MCH

Efficacy of oral corticosteroids for acute preschool wheeze

Oral corticosteroids are often used for acute preschool wheeze despite conflicting evidence of benefit. Researchers in this study assessed the efficacy of oral corticosteroids using systematic review and individual participant data meta-analyses. Individual data from seven trials comprising 2172 children, with 1728 children in the eligible age group was used half of whom had received oral corticosteroids (49.4%) and the other half placebo (50.6%). The study found that oral corticosteroids resulted in a greater change in wheezing severity score at 4 hours (mean difference –0·31), as well as reducing the duration of hospital stay (-3·18 hours), a reduction noted to be greatest in those with a history of wheezing or asthma. The researchers highlighted the benefit of oral corticosteroids especially in previous wheeze or asthma.

Reference

Lee, B., et al. (2024). Efficacy of oral corticosteroids for acute preschool wheeze: a systematic review and individual participant data meta-analysis of randomized clinical trials. The Lancet Respiratory Medicine, 0(0).

Post-mortem investigation of deaths due to pneumonia in children aged 1–59 months in sub-Saharan Africa and South Asia from 2016 to 2022

The CHAMPS network through minimally invasive tissue sampling and ante-mortem clinical information in low-resource countries determined the contribution of pneumonia to under-five mortality and causative pathogens. Among 1120 decedents, pneumonia was attributable in 40.6% of all cases. Causative agents were identified in 82.9% of pneumonia cases. The majority (67.3%) of pneumonia cases were presumed to be community-acquired with leading organisms being Streptococcus pneumoniae (35.3%), Klebsiella pneumoniae (25.5%), and Haemophilus influenzae (12.1%). Presumed hospital-acquired pneumonia was in one-third (32·7%) of cases including Klebsiella pneumoniae (43·0%), Acinetobacter baumannii (12·8%), S pneumoniae (10·1%), and Pseudomonas aeruginosa (10·1%). The researchers highlighted the role of Klebsiella pneumonia, H influenzae, and S pneumoniae warranting a review of empirical treatment in severe pneumonia and vaccine use.

Reference

Mahtab, S., et al. (2024). Post-mortem investigation of deaths due to pneumonia in children aged 1–59 months in sub-Saharan Africa and South Asia from 2016 to 2022: an observational study. The Lancet Child and Adolescent Health, 8(3), 201–213.

Diagnostic test accuracy of procalcitonin and C-reactive protein for predicting invasive and serious bacterial infections in young febrile infants

Infants below 90 days of life have a higher risk of serious bacterial infections. The diagnostic accuracy of c-reactive protein (CRP) as compared to procalcitonin in identifying febrile infants at low risk of invasive or serious infections is not well known. Researchers conducted a systematic review and meta-analysis involving 14 studies (n=7,755) and found the pAUC values greater for procalcitonin than CRP for invasive bacterial infections i.e 0.72 versus 0.28c, with optimal cut-offs being 0·49 ng/mL and 13·12 mg/L respectively. The pAUC values were similar for detecting serious bacterial infection, with corresponding optimal cut-offs being 0·17 ng/mL and 16·18 mg/L respectively. They thus concluded that in settings without procalcitonin, CRP can be used to identify invasive

bacterial infections with a cut-off of 20mg/L.

Reference

Norman-Bruce, H., et al. (2024). Diagnostic test accuracy of procalcitonin and C-reactive protein for predicting invasive and serious bacterial infections in young febrile infants: a systematic review and meta-analysis. The Lancet Child and Adolescent Health, 0(0).

Risk of Autism after Prenatal Topiramate, Valproate, or Lamotrigine Exposure

Maternal valproate use in pregnancy is associated with neurodevelopmental disorders in children. The risk with other anti-seizure medications isn't well studied. In this trial, population-based cohorts of pregnant women in the United States were followed and cumulative incidences of autism spectrum disorder in children exposed to topiramate, valproate, and lamotrigine were compared. The researchers found general population incidence among children at 8 years of age not exposed to anti-seizure medication to be 1.9% compared to 4.2% in children of epilepsy mothers not exposed to anti-seizure medications, 6.2% of topiramate-exposed, 10.5% of valproate-exposed and 4.1% of lamotrigine-exposed. The researchers concluded that children prenatally exposed to anti-seizure medications were at increased risk of autism spectrum disorder with the highest risk noted with valproate.

Reference

Hernández-Díaz, S., et al. (2024). Risk of Autism after Prenatal Topiramate, Valproate, or Lamotrigine Exposure. New England Journal of Medicine, 390(12), 1069–1079.

Simple versus Radical Hysterectomy in Women with Low-Risk Cervical Cancer

The incidence of parametrial infiltration in patients with early-stage low-risk cervical cancer is likely low, and therefore simple as opposed to radical hysterectomy could be better. In this non-inferiority RCT, 700 patients with low-risk cervical cancer were randomized (1:1) to simple or radical hysterectomy and followed up for 3 years for cancer recurrence. The study found no significant difference in the incidence of pelvic recurrence at 3 years i.e. 2.17% versus 2.52% in the radical and simple hysterectomy groups respectively. The incidence of early and late urinary incontinence, or retention was significantly higher in the radical hysterectomy group. Authors thus concluded that in patients with low-risk cervical cancer, simple hysterectomy was non-inferior to radical hysterectomy in cancer recurrence and was safer.

Reference

Plante, M.,et al. (2024). Simple versus Radical Hysterectomy in Women with Low-Risk Cervical Cancer. New England Journal of Medicine, 390(9), 819–829.

General Surgery

Skin Antisepsis Before Surgical Fixation of Extremity Fractures

Conflicting evidence exists for the alcohol-based antiseptic of choice before an extremity fracture surgery. This cluster-randomized, crossover trial involved 25 hospitals in the United States and Canada and randomized them to alcohol-based 0.7% iodine povacrylex or 2% chlorhexidine gluconate. Interventions were alternated every 2 months. The primary outcome was surgical site infection at 30 and 90 days. A total of 6785 and 1700 patients with closed and open fractures respectively were enrolled. In the closed-fracture group, the primary outcome occurred less (2.4%) in the Iodine group compared to 3.3% in the chlorhexidine group (odds ratio, 0.74). In the open-fracture group, the outcomes were similar. The researchers hence concluded that Iodine resulted in fewer surgical site infections in patients with closed fractures.

Reference

Sprague, S., et al. (2024). Skin Antisepsis before Surgical Fixation of Extremity Fractures. New England Journal of Medicine, 390(5), 409–420.

Conservative management versus laparoscopic cholecystectomy in uncomplicated symptomatic gallstone disease

The clinical and cost-effectiveness of either conservative management or laparoscopic cholecystectomy in uncomplicated symptomatic gallstone disease isn't clear. Researchers in this study enrolled 434 adults with uncomplicated symptomatic gallstone disease and randomly assigned (1:1) them to either receive conservative management or laparoscopic cholecystectomy. The primary endpoint was quality of life over 18 months, and secondary endpoints included costs, among others. By 18 months, one-quarter of participants in the conservative arm compared to two-thirds of patients in the cholecystectomy had received surgery. The QOL (assessed by short form-36 norm-based bodily pain score) didn't differ between groups (p=1.00), but the conservative approach was less costly (mean difference −£1033). The researchers concluded that laparoscopic surgery was not more effective, and a conservative approach may be more cost-effective.

Reference

Ahmed, I., et al. (2023). Effectiveness of conservative management versus laparoscopic cholecystectomy in the prevention of recurrent symptoms and complications in adults with uncomplicated symptomatic gallstone disease (C-GALL trial): pragmatic, multicentre randomized controlled trial. BMJ, 383, e075383. https://doi.org/10.1136/BMJ-2023-075383

Role of preoperative in-hospital delay on appendiceal perforation while awaiting appendicectomy

Appendicectomy is the standard treatment of appendicitis. Consensus on the surgical urgency for acute uncomplicated appendicitis is inexistent. Researchers in this study that was conducted in Finland and Norway randomized 1822 patients with acute uncomplicated

appendicitis to either appendicectomy scheduled within 8 h (n=914) or 24 h (n=908). In the intention-to-treat analysis, appendiceal perforation rate was similar between groups (absolute risk difference of 0.6%), with no significant differences in complication rates in 30 days i.e. 7% versus 6% in the < 8h and <24h groups respectively. The researchers concluded that scheduling appendicectomy within 24 hours doesn't increase perforation risk and suggested that this information can be used to allocate operating room resources, for instance postponing night-time appendicectomy to daytime.

Reference

Jalava, K., et al. (2023). Role of preoperative in-hospital delay on appendiceal perforation while awaiting appendicectomy (PERFECT): a Nordic, pragmatic, open-label, multicentre, non-inferiority, randomized controlled trial. Lancet (London, England), 402(10412), 1552–1561. https://doi.org/10.1016/S0140-6736(23)01311-9

Lifestyle

Intermittent fasting and health outcomes

This systematic review and meta-analysis sought to synthesize evidence on the benefits of intermittent fasting (IF). The researchers found that compared to a non-intervention diet in patients with overweight and obesity, IF significantly reduced waist circumference (−1.02 cm), fat mass (−0.72 kg), fasting insulin (−0.21), low-density lipoprotein cholesterol (−0.20), total cholesterol (−0.29), and triacylglycerols (−0.23), but increased fat-free mass (0.98 kg). In people with overweight or obesity, and type 2 diabetes, IF increases high-density lipoprotein cholesterol (HDL-C) levels compared to continuous energy restriction. The researchers concluded that IF likely has beneficial effects on various health outcomes among adults with overweight and obesity compared to a non-intervention diet or continuous energy restriction

Reference

Sun, M. L.,et al. (2024). Intermittent fasting and health outcomes: an umbrella review of systematic reviews and meta-analyses of randomized controlled trials. EClinicalMedicine, 70, 102519.

Tobacco use and risk of acute stroke

This large case-control study conducted in 32 countries explored the association of current tobacco smoking with different tobacco exposure types on risk of stroke and stroke subtypes. The study involved 13,462 stroke cases and 13,488 controls and found that current smoking was associated with an increased risk of all strokes (OR 1.64), and had a stronger association with ischemic stroke than intra-cerebral hemorrhage (odds ratio 1.85 versus 1.19 respectively). The population-attributable risk among current smokers was higher in high-income countries compared to lower-income countries. Of all etiological subtypes, large vessel stroke and undetermined cause were strongly associated with current smoking (OR 2.16 and 1.97 respectively). The authors recommended strategies to discourage tobacco use of any kind to ease the stroke burden.

Reference

Wang, X., et al. (2024). Tobacco use and risk of acute stroke in 32 countries in the INTERSTROKE study: a case-control study. EClinicalMedicine, 70, 102515.

Association between snoring and stroke

This study sought to determine if the observed association between snoring and stroke was causal. A total of 82,339 unrelated individuals with qualified genotyping data from the China Kadoorie Biobank were included in this study. The researchers observed positive associations between snoring and total stroke (HR 1.56 and 1.78), hemorrhagic stroke (HR 1.5 and 1.94), and ischemic stroke (HR 2.0 and 1.74) in both China Kadoorie Biobank and UK Biobanks respectively. The associations remained stable even after adjusting for body mass index. The authors concluded that among Chinese adults, there was a causal relationship between snoring and stroke.

Reference

Zhu, Y., et al. (2024). Causal association between snoring and stroke: a Mendelian randomization study in a Chinese population. The Lancet Regional Health - Western Pacific, 44, 101001.

Lifestyle medicine as a modality for prevention and management of chronic diseases

Lifestyle medicine is an approach that focuses on modifying unhealthy behaviors and promoting healthy ones to prevent and manage chronic diseases. This modality addresses multiple risk factors such as physical inactivity, unhealthy diet, tobacco use, and stress. Evidence shows that adopting a healthy lifestyle can significantly reduce the incidence and progression of chronic diseases such as cardiovascular diseases, diabetes, and cancer. The implementation of Lifestyle medicine requires a multidisciplinary approach involving healthcare providers, patients, and communities. Healthcare providers play a pivotal role in educating and motivating patients to adopt healthy behaviors, while communities can provide a supportive environment that fosters healthy lifestyles. The aim of this letter to editor is to summarize the evidence supporting the use of Lifestyle medicine in the prevention and management of chronic diseases.

Reference

Idris Zubairu Sadiq, M.Tech (Biotech.), J Taibah Univ Med Sci. 2023 Oct; 18(5): 1115–1117.
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