



## A compendium of snippets of original research published by UCMS faculty in other indexed journals

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 **Ansari MA, Singh PK, Dar SA, et al. Dysregulated phenotype of autoreactive Th17 and Treg clone cells in pemphigus vulgaris after in-vitro treatment with desmoglein antigen (Dsg-3). Immunobiology. 2023; 228(2):152340. doi: 10.1016/j.imbio.2023. 152340.**

The study aimed to elucidate the complex relationship of Th17 and Treg cells, their molecules, and the underlying mechanism in the development of pemphigus vulgaris (PV). IL-17 secreting (Th17) cells with phenotype CD4<sup>+</sup>IL-17<sup>+</sup> were greatly increased and IL-10 secreting (Treg) cells with phenotype CD4<sup>+</sup>IL-10<sup>+</sup> were reduced in PV cases; high expression of retinoic acid receptor-related orphan receptor gamma (ROR $\gamma$ ) mRNA in comparison to forkhead box P3 (FoxP3) mRNA confirmed the development of pro-inflammatory Th17 response in PV. Further, the cytokine profile of pro-inflammatory and anti-inflammatory cytokines suggested defective suppressive functions in Treg cells with high inflammatory response. These findings indicate that autoantigen Dsg-3 leads to a dysregulated immune response in PV by specifically allowing proliferation of IL-17 secreting T cells and negatively impacting on IL-10 secreting T cells.


 **Bansal D, Diwaker P, Gogoi P, Singh M, Singh AK, Singh B. Effectiveness of donor notification and counseling of HIV-reactive donors in a tertiary care hospital from North India: An audit. Asian J Transfus Sci. 2023; doi: 10.4103/ajts.AJTS\_75\_19.**

An audit of the records of human immunodeficiency virus (HIV) reactive donors over 2 years was conducted to determine the effectiveness of HIV reactive donor notification and counseling in a tertiary care center. Out of 60,907 donations, 124 (0.2%) were HIV reactive; of these 111 were informed about their HIV reactive status. While 78% were informed telephonically, the rest were informed by


confidential letter. Sixty-two of 111 (55.8%) came for one to one counseling, 82.2% of whom visited the integrated counselling and testing center (ICTC) thereafter. 20/62 (32.2%) reactive donors were undergoing anti-retroviral therapy after 6 months. Pre-donation screening and counseling by a trained counselor should be strengthened in developing countries.

 **Chaudhary P, Kumari S, Dewan P, Gomber S, Ahmed RS, Kotru M. Chemotherapy-induced oxidative stress in pediatric Acute Lymphoblastic Leukemia. Cureus. 2023;15(3):e35968. doi:10.7759/cureus. 35968.**


A case-control study compared the oxidative stress (OS) between children with acute lymphoblastic leukemia (ALL) ( $n=23$ ) and healthy controls ( $n=19$ ) through the measurement of plasma total antioxidant capacity (TAC) and thiobarbituric acid reactive substance (TBARS) levels at baseline and at the completion of induction I (four weeks), induction II (eight weeks), and induction IIA-consolidation (16 weeks) phases of chemotherapy in children with ALL. Also, change in OS during different phases of initial treatment, association between OS and the hematological toxicity of chemotherapy and serum cobalamin and folate levels were estimated. OS was significantly higher in children with ALL compared to controls. OS was highest at the end of the induction I phase despite the patients being in remission and was still higher than at diagnosis upon the completion of intensive chemotherapy (16 weeks). A significant correlation was found between serum folate levels and TAC levels at baseline ( $P=0.03$ ).

 **Goyal S, Khaliq F, Vaney N. Implementation of the online learning management system 'Moodle' as a blended approach to online teaching. Indian J Physiol Pharmacol. 2023;67(1):64-72. doi:10. 25259/IJPP\_208\_2022.**


This study aimed to determine the student's engagement, performance and perception of the online learning management system (LMS) developed for the education of 170 medical students enrolled in the first year of the MBBS course. Online activity of students on the LMS was recorded and assessments were done. Examination scores correlated positively with individual activity logs. In general, students favoured implementing Moodle as a complementary tool to traditional teaching.

 **Grover S, Jain S, Narang S, Gupta R, Garg S, Sharma D. Evaluation of cognitive function, serum 25-hydroxyvitamin D, and Vitamin D binding protein levels in chronic obstructive pulmonary disease: A case-control study. International Journal of Non-communicable Diseases. 2023;8(1):14-20. doi:10.4103/jncd.jncd\_70\_22.**

This study was undertaken to evaluate the correlation between serum 25 hydroxy cholecalciferol [25(OH)D] and vitamin D binding protein (VDBP) levels with cognitive function in COPD patients. In comparison to controls ( $n=33$ ), COPD patients ( $n=47$ ) were noted to have significantly lower Hindi Mental State Examination (HMSE) scores ( $P<0.0001$ ), cognitive impairment was present in 25.53% COPD patients ( $P=0.001$ ). While 65.96% of the COPD cases and 72.73% of the controls had vitamin D deficiency, serum biomarkers did not correlate with the HMSE scores. COPD, lower education status and higher smoking index were found to be predictors of lower HMSE scores.


 **Iorizzo M, Gioia Di Chiacchio N, Di Chiacchio N, et al. Intralesional steroid injections for inflammatory nail dystrophies in the pediatric population. Pediatr Dermatol. 2023.Mar 20 doi: 10.1111/pde.15295.**

The utility of intralesional steroid (triamcinolone acetonide) injections in the treatment of inflammatory nail dystrophies in the pediatric age-group was evaluated. A total of 141 nails were treated in 30 children aged 9-17 years. The technique, associated with only minor local adverse events, was generally well-tolerated and resulted in resolution of lesions in 19 patients, demonstrating thereby, that this technique is successful in children, even in the absence of digital block.


 **Jha T, Diwaker P, Arora VK, Sharma S. Prognostic value of IMP3 and its role as an epithelial mesenchymal transition promoter in breast carcinoma. Indian J Surg Oncol. 2023;1-9. doi: 10.1007/s13193-023-01735-7.**

A retrospective study included 60 breast carcinoma cases wherein immunohistochemistry for insulin-like growth factor 2 (IGF2), messenger RNA (mRNA)-binding protein-3 (IMP3) and SLUG was performed and evaluated in terms of percentage-cell-positivity and intensity of staining. IMP3

positivity was found in 87% breast carcinoma cases and was significantly associated with tumor size ( $P=0.03$ ) and TNM stage ( $P=0.024$ ). IMP3 staining intensity showed significant association with histological grade ( $P=0.009$ ), TNM stage ( $P=0.036$ ), and molecular subtype ( $P=0.03$ ). SLUG immunopositivity was seen in 90% breast carcinoma cases and was significantly associated with TNM stage ( $P=0.006$ ). SLUG staining intensity was significantly associated with age ( $P=0.025$ ) and TNM stage ( $P=0.004$ ). IMP3 and SLUG immunopositivity and their staining intensities were significantly associated ( $P<0.001$ ). IMP3 and SLUG percentage cell positivity was also significantly correlated ( $P<0.001$ ). IMP3 and SLUG are, thus, poor prognostic markers with a role in tumor invasiveness and aggressiveness via epithelial-mesenchymal transition and may be useful therapeutic targets for breast carcinoma.


 **Kaur K, Khalil S, Singh NP, Dewan P, Gupta P, Shah D. Antibiotic susceptibility, carrier state and predictors of outcome of Staphylococcus aureus infections in hospitalized children. Indian Pediatr. 2023; 60(1):49-53. PII: S097475591600469.**

This descriptive study enrolled 100 symptomatic children aged 1 month to 12 years, in whom *S. aureus* was isolated from the blood or body fluids, to ascertain the antibiotic resistance pattern, clinical profile and predictors for adverse outcomes in children hospitalized due to staphylococcal infection and to determine the frequency of nasal and axillary carrier states in these children. Infections of the skin and soft tissue and respiratory system were noted in 47% and 37% cases. Methicillin-resistant *Staphylococcus aureus* (MRSA) was detected in 62%, of which 63% were multidrug resistant. Carrier state was present in 49%; 80% being axillary carriers. High MIC for vancomycin was seen in 65%, and was associated with poor recovery [aOR (95%CI) 5.3 (1.6, 18.5);  $P=0.008$ ].


 **Madan S, Dutta S, Yadav R, et al. A study on the impact of diabetes mellitus on the severity of COVID-19-associated mucormycosis. Ann Natl Acad Med Sci (India). 2023;59(1):27-35. doi: 10.1055/s-0042-1759890.**

This retrospective study assessed the impact of diabetes mellitus (DM) on the severity of COVID-19 associated mucormycosis (CAM) in 100 patients and association of clinical correlates of DM with severity of CAM. A significantly higher level of presenting blood sugar and a longer duration of hospital stay was noted in patients having stage 3b or higher ( $P<0.05$ ) when compared with those having stage 3a or below. There was a strong correlation between severity of rhino-orbito-cerebral mucormycosis and blood sugar level at presentation, severity of DM and an inverse correlation with HDL. Therefore, poor metabolic


control was reported to be associated with a higher risk of a severe disease with intracranial involvement.

 **Raghuram H, Parakh S, Chidambaranathan S, et al.** *Impact of the COVID-19 pandemic on the mental health of transgender persons in India: Findings from an exploratory qualitative study. Front Glob Womens Health.* 2023;4:1126946. doi: 10.3389/fgwh.2023.1126946.

The study assessed the impact of COVID-19 pandemic on the mental health of transgender persons in India through 22 in-depth interviews (IDI) and 6 focus group discussions (FGD) with persons self-identifying as transgender or belonging to ethno-cultural transgender communities from across India. The study highlighted significant dimensions to mental health associated with the COVID-19 pandemic such as fear and suffering compounding pre-existing inaccessibility of healthcare and reduced access to mental health, disruption of unique social support needs of transgender persons, exacerbation of pre-existing vulnerabilities and stigma. Gender dysphoria had both negative and positive influences on mental health during the pandemic.


 **Rawley B, Khan AP, Chopra S, Bansal K, Anamika FNU, Khan AM.** *Gender differences in first authorship of randomized controlled trials from India. Contemp Clin Trials.* 2023;125:107081. doi: 10.1016/j.cct.2023.107081.

This study was conducted to quantify the gender composition of first authors of randomized controlled trials (RCTs) published from India between 1st January 2011 to 31st December 2020. Pubmed database was searched using the keywords “randomized controlled trial” and 4136 RCTs were included where the first author was from India during the specified period. The gender of first author could be identified using Gender-API or manually in 4056 RCTs; 1198 (30%) were women. The mean (SD) percentage of yearly distribution of women and men as first authors was 29.53(2.23) and 70.46(2.23), respectively. No change in gender distribution of first authorship was noted over ten years. This study calls for a more inclusive participation of women researchers in India.


 **Salhotra R, Tyagi A, Minz EE, Chaudhary P, Singh D, Toppo V.** *COVID-19 vaccination among health-care workers: trend and protection in a tertiary care hospital in northern India. Cureus.* 2023;15(3):e35777. doi 10.7759/cureus.35777.

This cross-sectional survey determined the COVID-19 vaccination trends and protection among healthcare workers (HCWs) in a dedicated COVID-19 tertiary care hospital in Northern India. Out of 241 respondents, 64.3% were fully vaccinated, 21.9% were partially vaccinated and 13.7% were


unvaccinated. The overall rate of infection with COVID-19 was 45.64%; 58.18%, 21.81% and 20% respectively among unvaccinated, partially vaccinated and fully-vaccinated HCWs. The odds of infection among vaccinated versus unvaccinated HCWs was 0.338 (95% CI: 0.224 to 0.512;  $P < 0.001$ ). Hospitalization rate among infected HCWs was 6.36% while that in fully vaccinated HCWs was nil. Vaccination was shown to reduce the rates of infection and hospitalization among HCWs.

 **Sarkar K, Kashyap B, Jhamb R, Madhu SV, Avasthi R, Hyankni P.** *Correlation of serum adenosine deaminase levels with microbiological parameters in pulmonary tuberculosis. Indian J Clin Biochem.* 2023. doi: 10.1007/s12291-023-01116-5.

This study analysed serum samples from 40 cases of pulmonary tuberculosis to find the association between serum adenosine deaminase levels and microbiological parameters. Serum adenosine deaminase levels were significantly associated ( $P < 0.05$ ) with age, sputum smear microscopy findings, time to culture positivity, CBNAAT category and mean Ct value which can be further explored and utilised in diagnosis and treatment of pulmonary tuberculosis.


 **Sharma K, Batra P, Dewan P, Gogoi P, Gupta B.** *Iron profile in term small for gestational age infants at 10 weeks of age and correlation with maternal iron profile: a prospective cohort study. Indian Pediatr.* 2023;60(3):197-201. PII: S097475591600475.

This prospective study conducted from November 2018 to April 2020, enrolled 120 term, small for gestational age (SGA) babies and their mothers with the objective of assessing the proportion of term SGA neonates developing iron deficiency anemia (IDA) by 10 weeks of age and determining the relation between iron profile and hepcidin of these babies at birth and at 10 weeks of age with the maternal iron profile. Nearly a third of the term SGA babies developed anemia at 6 weeks; 14.2% and 23.3% of the infants developed IDA at 6 and 10 weeks' age respectively. No significant correlation was found between hemoglobin, iron and hepcidin levels in the cord blood, and infant's blood at 10 weeks with that of mothers. It was thus concluded that a significant proportion of term SGA infants developed anemia during early infancy, independent of maternal iron status.


 **Sharma N, Gupta R, Kotru M, Gomber S, Gautam HV.** *Higher baseline natural killer cell counts are associated with a lower 8-day blast count and lower day 33 minimal residual disease in children with pediatric B-acute lymphoblastic leukemia. Am J Blood Res.* 2023;13(1):53-60.

Twenty-five treatment-naïve children with B-ALL aged 0-14 years were recruited; flow cytometry was employed for NK


cell count apart from routine investigations. Baseline NK cell percentage demonstrated a significant negative correlation with day 8 prednisone poor blast response ( $P$  value = 0.02,  $r$  value = -0.44) and positive MRD on day 33 ( $P$  = 0.01,  $r$  = -0.49). No correlation between NK Cell counts and age, gender and WBC count was seen. NK cells counts at diagnosis may thus serve as a simple and useful parameter for prognostication and risk stratification in B-ALL.

 **Shastri M, Gautam P, Diwaker P, Gogoi P, Arora VK. Clinico-cytomorphological spectrum of calcinosis cutis. J Cytol. 2023;40:24-27. doi: 10.4103/joc.joc\_75\_22.**


The clinical and cytomorphologic features of 17 cases reported as calcinosis cutis on fine needle aspiration cytology were reviewed. Calcinosis cutis had a wide spectrum of clinical presentations with the lesions appearing as painless swellings of variable sizes, occurring commonly in the scrotum, iliac region, scalp, pinna, neck, axilla, elbow, arm, thigh and gluteal region. Fine needle aspiration cytology offered a minimally invasive approach for diagnosing calcinosis cutis, thus eliminating the need for more extensive biopsy procedures.

 **Singh A, Salhotra R, Bajaj M, et al. Retention of knowledge and efficacy of a hands-on training session in oxygen therapy for COVID-19 among healthcare workers. Indian J Crit Care Med. 2023; 27(2):127-131.**

This study aimed to find out the impact of hands-on training of healthcare workers (HCWs) in oxygen therapy for COVID-19 patients on the knowledge and degree of retention of this knowledge 6 weeks after the training session. A total of 256 responses were obtained for the pre-training test and post-training test. About 89% of the HCWs had a significant gain of knowledge; 76% of the HCWs were able to retain knowledge; definitive improvement in baseline knowledge was observed after 6 weeks of training. It was therefore suggested that training should be reinforced 6 weeks later to augment retention.

 **Singh S, Solanki M, Vaney N, Bhan A. Medical ethics teaching in the new undergraduate physiology competency-based curriculum in medical institutions in Delhi: A pilot, feasibility study. Indian J Med Ethics. 2023 Feb 24. doi: 10.20529/IJME. 2023.018.**

This was a questionnaire-based, feasibility study conducted amongst the faculty and senior residents of the physiology departments of nine medical colleges in Delhi, to determine the views of physiology educators in Delhi regarding the implementation of ethics teaching in physiology in the competency-based medical education curriculum. Out of 60 respondents, 24 were senior residents and 36 were faculty; 55% respondents felt bioethics and clinical ethics are not synonymous; 53% believed ethics education can be accomplished in a large group setting; 75% believed it should primarily be the responsibility of the physiology faculty and 61.7% wanted ethics to be included in the formative assessment. The majority felt ethics in the physiology CBME should be an inseparable part of teaching in all instructional modalities.

 **Yadav R, Madan S, Rohatgi J, et al. Corneal manifestations and treatment among patients with COVID-19-associated rhino-orbital-cerebral mucormycosis. Indian J Ophthalmol. 2023;71(1):101-108. doi:10.4103/ijo.IJO\_1477\_22.**

This record-based analysis aimed to report the corneal manifestations in patients with COVID-19-associated rhino-orbitocerebral mucormycosis (ROCM). Corneal manifestations were noted in 32 of the 220 patients diagnosed with ROCM over 3 months. Systemic mucormycosis, uncontrolled diabetes, recent COVID-19 infection, and injudicious use of systemic steroids were the most commonly reported underlying risk factors. The left eye was the more frequently affected organ. A central corneal ulcer was the most common manifestation of mucormycosis and amphotericin in concentrations as low as 0.5 mg/mL as eye drops was therapeutically effective.