

SELECTED ABSTRACTS FROM PUBMED

1. *Esposito G, Pesce M, Seguella L, Sanseverino W, Lu J, Corpetti C, et al. The potential of cannabidiol in the COVID-19 pandemic. Br J Pharmacol. 2020 Nov;177(21):4967-4970.*

ABSTRACT

Identifying drugs effective in the new coronavirus disease 2019 (COVID-19) is crucial, pending a vaccine against SARS-CoV2. We suggest the hypothesis that cannabidiol (CBD), a non-psychoactive phytocannabinoid, has the potential to limit the severity and progression of the disease for several reasons:- (a) High-cannabidiol Cannabis sativa extracts are able to down-regulate the expression of the two key receptors for SARS-CoV2 in several models of human epithelia, (b) cannabidiol exerts a wide range of immunomodulatory and anti-inflammatory effects and it can mitigate the uncontrolled cytokine production responsible for acute lung injury, (c) being a PPAR γ agonist, it can display a direct antiviral activity and (d) PPAR γ agonists are regulators of fibroblast/myofibroblast activation and can inhibit the development of pulmonary fibrosis, thus ameliorating lung function in recovered patients. We hope our hypothesis, corroborated by preclinical evidence, will inspire further targeted studies to test cannabidiol as a support drug against the COVID-19 pandemic.

2. *Jayaweera M, Perera H, Gunawardana B, Manatunge J. Transmission of COVID-19 virus by droplets and aerosols: A critical review on the unresolved dichotomy. Environ Res. 2020 Sep;188:109819.*

ABSTRACT

The practice of social distancing and wearing masks has been popular worldwide in combating the contraction of COVID-19. Undeniably, although such practices help control the COVID-19 pandemic to a greater extent, the complete control of virus-laden droplet and aerosol transmission by such practices is poorly understood. This review paper intends to outline the literature concerning the transmission of virus-laden droplets and aerosols in different environmental settings and demonstrates the behavior of droplets and aerosols resulted from a cough-jet of an infected person in various confined spaces. The case studies that have come out in different countries have, with prima facie evidence, manifested that the airborne transmission plays a profound role in contracting susceptible hosts. The infection propensities in confined spaces (airplane, passenger car, and healthcare center) by the transmission of droplets and aerosols under varying ventilation conditions were discussed. Interestingly, the nosocomial transmission by airborne SARS-CoV-2 virus-laden aerosols in healthcare facilities may be plausible. Hence, clearly defined, science-based administrative, clinical, and physical measures are of paramount importance to eradicate the COVID-19 pandemic from the world.

Keywords: Airborne transmission; Coronavirus; Lockdown; Masks; SARS-CoV-2.

3. *Xiong X, Wang P, Su K, Cho WC, Xing Y. Chinese herbal medicine for coronavirus disease 2019: A systematic review and meta-analysis. Pharmacol Res. 2020 Oct;160:105056.*

ABSTRACT

Currently, coronavirus disease 2019 (COVID-19), which can lead to severe respiratory failure and death, is now a global pandemic with no specific anti-viral drugs or vaccines. However, It is worth noting that traditional Chinese medicine (TCM), especially Chinese herbal medicine (CHM), has been widely applied in mainland China since outbreak, bringing new hope for the prevention and control of COVID-19. A comprehensive literature searching was conducted in 7 electronic databases from their inception up to June 21, 2020 to evaluate the efficacy and safety of CHM for COVID-19. Eighteen randomized controlled trials (RCTs) involving 2275 patients were enrolled. Most of CHMs were originated from classical Chinese herbal formulas. Liquoric Root (Gancao, Radix Glycyrrhizae), Baical Skullcap Root (Huangqin, Radix Scutellariae Baicalensis), Pinellia Rhizome (Banxia, Rhizoma Pinelliae Tematae), Forsythia Fruit (Lianqiao, Fructus Forsythiae Suspensae), and Bitter Apricot Seed (Kuxingren, Semen Armeniacae Amarum) were most frequently used Chinese herbs. The most commonly used dosage formulation was decoction. Our meta-analyses found that comparing CHM group and conventional western medicine group, CHM group has improvements in several clinical parameters including lung CT, clinical cure rate, ranging from mild to critical cases, length of hospital stay, total score of clinical symptoms, fever reduction time, symptom score of fever, number of cough reduction cases, symptom score of cough, number of fatigue reduction cases, symptom score of fatigue, disappearing time of fatigue, TCM syndrome, viral nucleic acid testing, and inflammatory biomarkers (C-reactive protein). Besides, no severe adverse effects was identified by CHM. CHM, especially classical Chinese herbal formulas, could be used as potential candidates for COVID-19 in this battle.

Keywords: Chinese herbal medicine; Coronavirus disease 2019; Meta-analysis; Randomized controlled trial; Systematic review; Traditional Chinese medicine.

4. *Alsoufi A, Alsuyihili A, Msherghi A, Elhadi A, Atiyah H, Ashini A, et al. Impact of the COVID-19 pandemic on medical education: Medical students' knowledge, attitudes, and practices regarding electronic learning. PLoS One. 2020 Nov 25;15(11):e0242905.*

ABSTRACT

The Coronavirus Disease 2019 (COVID-19) pandemic has caused an unprecedented disruption in medical education and healthcare systems worldwide. The disease can cause

life-threatening conditions and it presents challenges for medical education, as instructors must deliver lectures safely, while ensuring the integrity and continuity of the medical education process. It is therefore important to assess the usability of online learning methods, and to determine their feasibility and adequacy for medical students. We aimed to provide an overview of the situation experienced by medical students during the COVID-19 pandemic, and to determine the knowledge, attitudes, and practices of medical students regarding electronic medical education. A cross-sectional survey was conducted with medical students from more than 13 medical schools in Libya. A paper-based and online survey was conducted using email and social media. The survey requested demographic and socioeconomic information, as well as information related to medical online learning and electronic devices; medical education status during the COVID-19 pandemic; mental health assessments; and e-learning knowledge, attitudes, and practices. A total of 3,348 valid questionnaires were retrieved. Most respondents (64.7%) disagreed that e-learning could be implemented easily in Libya. While 54.1% of the respondents agreed that interactive discussion is achievable by means of e-learning. However, only 21.1% agreed that e-learning could be used for clinical aspects, as compared with 54.8% who disagreed with this statement and 24% who were neutral. Only 27.7% of the respondents had participated in online medical educational programs during the COVID-19 pandemic, while 65% reported using the internet for participating in study groups and discussions. There is no vaccine for COVID-19 yet. As such, the pandemic will undeniably continue to disrupt medical education and training. As we face the prospect of a second wave of virus transmission, we must take certain measures and make changes to minimize the effects of the COVID-19 outbreak on medical education and on the progression of training. The time for change is now, and there should be support and enthusiasm for providing valid solutions to reduce this disruption, such as online training and virtual clinical experience. These measures could then be followed by hands-on experience that is provided in a safe environment.

5. *Al-Balas M, Al-Balas HI, Jaber HM, Obeidat K, Al-Balas H, Aborajoo EA, et al. Distance learning in clinical medical education amid COVID-19 pandemic in Jordan: current situation, challenges, and perspectives. BMC Med Educ. 2020 Oct 2;20(1):341.*

ABSTRACT

Background: As COVID-19 has been declared as a pandemic disease by the WHO on March 11th, 2020, the global incidence of COVID-19 disease increased dramatically. In response to the COVID-19 situation, Jordan announced the emergency state on the 19th of March, followed by the curfew on 21 March. All educational institutions have been closed as well as educational activities including clinical medical education have been suspended on the 15th of March. As a result,

Distance E-learning emerged as a new method of teaching to maintain the continuity of medical education during the COVID-19 pandemic related closure of educational institutions. Distance E-Learning is defined as using computer technology to deliver training, including technology-supported learning either online, offline, or both. Before this period, distance learning was not considered in Jordanian universities as a modality for education. This study aims to explore the situation of distance E-learning among medical students during their clinical years and to identify possible challenges, limitations, satisfaction as well as perspectives for this approach to learning.

Methods: This cross-sectional study is based on a questionnaire that was designed and delivered to medical students in their clinical years. For this study, the estimated sample size (n = 588) is derived from the online Raosoft sample size calculator.

Results: A total of 652 students have completed the questionnaire, among them, 538 students (82.5%) have participated in distance learning in their medical schools amid COVID-19 pandemic. The overall satisfaction rate in medical distance learning was 26.8%, and it was significantly higher in students with previous experience in distance learning in their medical schools as well as when instructors were actively participating in learning sessions, using multimedia and devoting adequate time for their sessions. The delivery of educational material using synchronous live streaming sessions represented the major modality of teaching and Internet streaming quality and coverage was the main challenge that was reported by 69.1% of students.

Conclusion: With advances in technologies and social media, distance learning is a new and rapidly growing approach for undergraduate, postgraduate, and health care providers. It may represent an optimal solution to maintain learning processes in exceptional and emergency situations such as COVID-19 pandemic. Technical and infrastructural resources reported as a major challenge for implementing distance learning, so understanding technological, financial, institutional, educators, and student barriers are essential for the successful implementation of distance learning in medical education.

Keywords: COVID-19; Distance learning; E-learning; Medical education.

6. *Wolff M, Hammoud M, Santen S, Deiorio N, Fix M. Coaching in undergraduate medical education: a national survey. Med Educ Online. 2020 Dec;25(1):1699765.*

ABSTRACT

Background: Evidence to support coaching in medical education has grown over the past decade leading educators to search for resources to aid the development of their own coaching programs. A sample of medical schools in the USA were surveyed to describe coaching programs

to assist other institutions in the development and implementation of programs.

Methods: Participants representing 32 medical schools attending a coaching conference in October 2018 were surveyed via email regarding their undergraduate medical education (UME) coaching programs. The 19-item instrument contained questions on program demographics, program characteristics, coach characteristics, coach training and coach assessment and program evaluation.

Results: The response rate was 100% (32/32 programs). Nearly all respondents had a coaching program (53%, 17/32) or were developing one (44%, 14/32) with the majority being implemented in the past five years (82%, 14/17). Professional identity formation (80%, 20/25), professionalism (76%, 19/25), and academic performance (76%, 19/25) were the most commonly identified programmatic goals. The majority of coaches (64%, 16/25) received between 5-25% full time equivalent effort to support their role. Coaches did not formally assess students in any domain at most programs (84%, 21/25) or directly observe their students clinically (76%, 19/25). The majority of programs had formal coach training (88%, 22/25).

Conclusion: These results demonstrate that coaching is being used to improve performance, professionalism, and professional identity formation in UME. This sample of coaching programs informs the discussion of coaching in medical education as educators strive to implement effective coaching programs.

Keywords: Coaching; advising; mentorship; undergraduate medical education; wellbeing.

7. **Mahmud E, Dauerman HL, Welt FGP, Messenger JC, Rao SV, Grines C, et al. Management of Acute Myocardial Infarction During the COVID-19 Pandemic: A Position Statement From the Society for Cardiovascular Angiography and Interventions (SCAI), the American College of Cardiology (ACC), and the American College of Emergency Physicians (ACEP). J Am Coll Cardiol. 2020 Sep 15;76(11):1375-1384.**

ABSTRACT

The worldwide pandemic caused by the novel acute respiratory syndrome coronavirus 2 has resulted in a new and lethal disease termed coronavirus disease-2019 (COVID-19). Although there is an association between cardiovascular disease and COVID-19, the majority of patients who need cardiovascular care for the management of ischemic heart disease may not be infected with this novel coronavirus. The objective of this document is to provide recommendations for a systematic approach for the care of patients with an acute myocardial infarction (AMI) during the COVID-19 pandemic. There is a recognition of two major challenges in providing recommendations for AMI care in the COVID-19 era. Cardiovascular manifestations of COVID-19 are complex with patients presenting with AMI, myocarditis simulating an ST-

elevation myocardial infarction (STEMI) presentation, stress cardiomyopathy, non-ischemic cardiomyopathy, coronary spasm, or nonspecific myocardial injury, and the prevalence of COVID-19 disease in the U.S. population remains unknown with risk of asymptomatic spread. This document addresses the care of these patients focusing on 1) the varied clinical presentations; 2) appropriate personal protection equipment (PPE) for health care workers; 3) role of the Emergency Department, Emergency Medical System and the Cardiac Catheterization Laboratory; and 4) Regional STEMI systems of care. During the COVID-19 pandemic, primary PCI remains the standard of care for STEMI patients at PCI capable hospitals when it can be provided in a timely fashion, with an expert team outfitted with PPE in a dedicated CCL room. A fibrinolysis-based strategy may be entertained at non-PCI capable referral hospitals or in specific situations where primary PCI cannot be executed or is not deemed the best option.

Keywords: COVID-19; STEMI; acute myocardial infarction; emergency medical system; fibrinolysis; percutaneous coronary intervention.

8. **Jia X, Al Rifai M, Hussain A, Martin S, Agarwala A, Virani SS. Highlights from Studies in Cardiovascular Disease Prevention Presented at the Digital 2020 European Society of Curr Atheroscler Rep. 2020 Oct 3;22(12):72.**

ABSTRACT

Purpose of review: The review highlights selected studies related to cardiovascular disease (CVD) prevention that were presented at the 2020 European Society of Cardiology (ESC) Congress-The Digital Experience.

Recent findings: The studies reviewed include clinical trials on novel RNA interference-based lipid-lowering therapies AKCEA-APOCIII-LRx and vupanorsen (AKCEA-ANGPTL3-LRx); the EVAPORATE trial assessing the effects of icosapent ethyl on coronary plaque volume progression; the LoDoCo2 trial evaluating the efficacy of low-dose colchicine in cardiovascular disease risk reduction among patients with chronic coronary artery disease; as well as the EMPEROR-Reduced trial evaluating cardiovascular and renal outcomes with empagliflozin in patients with heart failure and reduced ejection fraction. In addition, we review the BPLTTC analysis on blood pressure treatment across blood pressure levels and CVD status and discuss findings from the BRACE CORONA study that examined continuing versus suspending angiotensin-converting enzyme inhibitor or angiotensin receptor blockers in patients on these antihypertensive medications who were hospitalized with COVID-19 infection. The studies presented at the 2020 digital ESC Congress highlight the continuing advancements in the field of CVD prevention.

Keywords: ANGPTL3; APOCIII; COVID-19; Cardiovascular disease prevention; Colchicine; Empagliflozin.

9. *Kadosh E, Snir-Alkalay I, Venkatachalam A, May S, Lasry A, Elyada E, et al. The gut microbiome switches mutant p53 from tumour-suppressive to oncogenic. Nature. 2020 Oct;586(7827):133-138.*

ABSTRACT

Somatic mutations in p53, which inactivate the tumour-suppressor function of p53 and often confer oncogenic gain-of-function properties, are very common in cancer. Here we studied the effects of hotspot gain-of-function mutations in Trp53 (the gene that encodes p53 in mice) in mouse models of WNT-driven intestinal cancer caused by Csnk1a1 deletion or ApcMin mutation. Cancer in these models is known to be facilitated by loss of p53. We found that mutant versions of p53 had contrasting effects in different segments of the gut: in the distal gut, mutant p53 had the expected oncogenic effect; however, in the proximal gut and in tumour organoids it had a pronounced tumour-suppressive effect. In the tumour-suppressive mode, mutant p53 eliminated dysplasia and tumorigenesis in Csnk1a1-deficient and ApcMin/+ mice, and promoted normal growth and differentiation of tumour organoids derived from these mice. In these settings, mutant p53 was more effective than wild-type p53 at inhibiting tumour formation. Mechanistically, the tumour-suppressive effects of mutant p53 were driven by disruption of the WNT pathway, through preventing the binding of TCF4 to chromatin. Notably, this tumour-suppressive effect was completely abolished by the gut microbiome. Moreover, a single metabolite derived from the gut microbiota-gallic acid-could reproduce the entire effect of the microbiome.

Supplementing gut-sterilized p53-mutant mice and p53-mutant organoids with gallic acid reinstated the TCF4-chromatin interaction and the hyperactivation of WNT, thus conferring a malignant phenotype to the organoids and throughout the gut. Our study demonstrates the substantial plasticity of a cancer mutation and highlights the role of the microenvironment in determining its functional outcome.

10. *Zhao L-Y, Song J, Liu Y, Song C-X, Yi C. Mapping the epigenetic modifications of DNA and RNA. Protein Cell. 2020 Nov;11(11):792-808.*

ABSTRACT

Over 17 and 160 types of chemical modifications have been identified in DNA and RNA, respectively. The interest in understanding the various biological functions of DNA and RNA modifications has led to the cutting-edged fields of epigenomics and epitranscriptomics. Developing chemical and biological tools to detect specific modifications in the genome or transcriptome has greatly facilitated their study. Here, we review the recent technological advances in this rapidly evolving field. We focus on high-throughput detection methods and biological findings for these modifications, and discuss questions to be addressed as well. We also summarize third-generation sequencing methods, which enable long-read and single-molecule sequencing of DNA and RNA modification.

Keywords: DNA methylation; DNA modification; RNA modification; epigenetics; epitranscriptomics; long read sequencing.