Dr. Leo's "In the Literature"

1. Among patients with severe CAP being treated in the ICU, those who received hydrocortisone had a lower risk of death, mechanical intubation and vassopressor need by day 28 than those who received placebo
2. Large Language model AI such as ChatGPT4 can provide similar results and support breast tumor boards
3. healthy sleep prior to SARS-CoV-2 infection, both before and during the COVID-19 pandemic, were protective against PCC (long-COVID)
4. Stopping universal admission testing in the national health systems of 2 countries (England and Scotland) was associated with significant increases (41% and 26% relative increase) in hospital-onset SARS-CoV-2 infections
5. Among critically ill adults with obesity undergoing extubation, the use of NIV was effective to reduce treatment-failure within 3 days. failure risk reduced from 26% to 13%
6. Outpatient treatment with metformin reduced long COVID incidence by about 41%
7. In participants with OSA, better PAP adherence was associated with significantly lower health care costs over 3 years

NEJM - 5/2023 - hydrocortisone in severe CAP

- A total of 800 patients had undergone randomization when the trial was stopped after the second planned interim analysis. Data from 795 patients were analyzed.
- By day 28, death had occurred in 25 of 400 patients (6.2%; 95% confidence interval [CI], 3.9 to 8.6) in the hydrocortisone group and in 47 of 395 patients (11.9%; 95% CI, 8.7 to 15.1) in the placebo group (absolute difference, −5.6 percentage points; 95% CI, −9.6 to −1.7; P=0.006).
- Among the patients who were not undergoing mechanical ventilation at baseline, endotracheal intubation was performed in 40 of 222 (18.0%) in the hydrocortisone group and in 65 of 220 (29.5%) in the placebo group (hazard ratio, 0.59; 95% CI, 0.40 to 0.86).
- Among the patients who were not receiving vasopressors at baseline, such therapy was initiated by day 28 in 55 of 359 (15.3%) of the hydrocortisone group and in 86 of 344 (25.0%) in the placebo group (hazard ratio, 0.59; 95% CI, 0.43 to 0.82).
- The frequencies of hospital-acquired infections and gastrointestinal bleeding were similar in the two groups; patients in the hydrocortisone group received higher daily doses of insulin during the first week of treatment
- Among patients with severe community-acquired pneumonia being treated in the ICU, those who received hydrocortisone had a lower risk of death by day 28 than those who received placebo
- https://www.nejm.org/doi/full/10.1056/NEJMoa2215145

Nature - 5/2023 - Large language model ChatGPT as a support tool for breast tumor board.

- Large language models (LLM) such as ChatGPT have gained public and scientific attention. The aim of this study is to evaluate ChatGPT as a support tool for breast tumor board decisions

making. We inserted into ChatGPT-3.5 clinical information of <u>ten consecutive patients</u> presented in a breast tumor board in our institution. <u>We asked the chatbot to recommend management</u>. <u>The results generated by ChatGPT were compared to the final recommendations of the tumor board</u>. They were also graded independently by two senior radiologists. Grading scores were between 1–5 (1 = completely disagree, 5 = completely agree), and in three different categories: summarization, recommendation, and explanation. The mean age was 49.4, 8/10 (80%) of patients had invasive ductal carcinoma, one patient (1/10, 10%) had a ductal carcinoma in-situ and one patient (1/10, 10%) had a phyllodes tumor with atypia.

- <u>In seven out of ten cases (70%), ChatGPT's recommendations were similar to the tumor board's decisions.</u> Mean scores while grading the chatbot's summarization, recommendation and explanation by the first reviewer were 3.7, 4.3, and 4.6 respectively. Mean values for the second reviewer were 4.3, 4.0, and 4.3, respectively. In this proof-of-concept study, we present initial results on the use of an LLM as a decision support tool in a breast tumor board. <u>Given the significant advancements, it is warranted for clinicians to be familiar with the potential benefits and harms of the technology</u>
- https://www.nature.com/articles/s41523-023-00557-8

JAMA - sleep health prior to COVID and risk for Long-COVID (PCC-Post-Covid Condition)

- Of the <u>1979 participants</u> reporting SARS-CoV-2 infection (mean [SD] age, 64.7 [4.6] years; 1979 [100%] female; and 1924 [97.2%] White vs 55 [2.8%] other races and ethnicities), <u>845 (42.7%) were frontline health care workers</u>, and <u>870 (44.0%) developed PCC</u>.
- Compared with women who had a prepandemic sleep score of 0 or 1 (least healthy), <u>those who scored 5 (most healthy) had a 30% lower risk of developing PCC</u> (multivariable-adjusted relative risk, 0.70; 95% CI, 0.52-0.94; *P* for trend <.001).
- Associations did not differ by health care worker status.
- <u>No or little daytime dysfunction prepandemic and good sleep quality during the pandemic were independently associated with a lower risk of PCC</u> (relative risk, 0.83 [95% CI, 0.71-0.98] and 0.82 [95% CI, 0.69-0.99], respectively).
- Results were similar when PCC was defined as having 8 or more weeks of symptoms or as having ongoing symptoms at the time of PCC assessment
- healthy sleep measured prior to SARS-CoV-2 infection, both before and during the COVID-19 pandemic, may be protective against PCC
- https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2805380

JAMA - 5/5/2023 -

- During the study period, there were 46 517 COVID-19–related admissions (34 183 community-onset, 12 334 hospital-onset cases) in Scotland, and 518 379 COVID-19–related admissions (398 264 community-onset, 120 115 hospital-onset cases) in England.
- <u>The mean (SD) weekly rate of new hospital-onset SARS-CoV-2 infections per 1000</u> estimated community infections in Scotland <u>increased from 0.78</u> (0.37) during the Delta dominance period, to <u>0.99 (0.21) during Omicron</u> dominance, t<u>o 1.64</u> (0.37) after universal admission testing ended (<u>Figure</u>, A). The immediate level change was statistically significant after admission testing

ended (**41% relative increase**; 95% CI, 6%-76%) but not after the Delta-to-Omicron transition ([Table](#)).

- Likewise, during analogous periods in England, the same mean (SD) rate increased from 0.64 (0.14) to 1.00 (0.17) to 1.39 (0.34) ([Figure](#), B). The immediate level change was significant after admission testing ended (**26% relative**increase; 95% CI, 8%-45%) but not after the Delta-to-Omicron transition. Findings were similar with incident community-acquired SARS-CoV-2 hospitalizations as the denominator ([Figure](#), C and D; [Table](#)).
- Stopping universal admission testing in the national health systems of 2 countries (England and Scotland) was associated with significant increases in hospital-onset SARS-CoV-2 infections relative to community-onset infections
- https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2805585

Lancet - 1/2023 - NIV post extubation in critically ill pts with obesity

- From Oct 2, 2019, to July 17, 2021, of the 1650 screened patients, 981 were enrolled.
- Treatment failure occurred in 66 (13·5%) of 490 patients in the NIV group and
- in 130 (26·5%) of 491 patients in the oxygen-therapy group (relative risk 0·43; 95% CI 0·31–0·60**, p<0·0001)**. Medical or surgical status did not modify the effect of NIV group on the treatment-failure rate. Reintubation within 3 days after extubation was similar in the non-invasive ventilation group and in the oxygen therapy group in the intention-to-treat analysis (48 (10%) of 490 patients and 59 (12%) of 491 patients, p=0·26) and lower in the NIV group than in the oxygen-therapy group in the post-hoc cross-over (51 (9%) of 560 patients and 56 (13%) of 421 patients, p=0·037) analysis. No severe adverse events were reported
- Among critically ill adults with obesity undergoing extubation, the use of NIV was effective to reduce treatment-failure within 3 days.
- https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(22)00529-X/fulltext

The Lancet ID - 6/8/2023 - Metformin use and incidence of long-COVID

- Between Dec 30, 2020, and Jan 28, 2022, 6602 people were assessed for eligibility and 1431 were enrolled and randomly assigned. Of 1323 participants who received a dose of study treatment and were included in the modified intention-to-treat population, 1126 consented for long-term follow-up and completed at least one survey after the assessment for long COVID at day 180 (564 received metformin and 562 received matched placebo; a subset of participants in the metformin *vs* placebo trial were also randomly assigned to receive ivermectin or fluvoxamine). 1074 (95%) of 1126 participants completed at least 9 months of follow-up. 632 (56·1%) of 1126 participants were female and 494 (43·9%) were male; 44 (7·0%) of 632 women were pregnant. The median age was 45 years (IQR 37–54) and median BMI was 29·8 kg/m^2 (IQR 27·0–34·2).
- Overall, 93 (8·3%) of 1126 participants reported receipt of a long COVID diagnosis by day 300.
- The cumulative incidence of long COVID by day 300 was 6·3% (95% CI 4·2–8·2) in participants who received metformin and 10·4% (7·8–12·9) in those who received identical metformin placebo (hazard ratio [HR] 0·59, 95% CI 0·39–0·89; p=0·012). The metformin beneficial effect was consistent across prespecified subgroups. When metformin was started within 3 days of symptom onset, the HR was 0·37 (95% CI 0·15–0·95). There was no effect on cumulative

incidence of long COVID with ivermectin (HR 0·99, 95% CI 0·59–1·64) or fluvoxamine (1·36, 0·78–2·34) compared with placebo.

- Outpatient treatment with metformin reduced long COVID incidence by about 41%, with an absolute reduction of 4·1%, compared with placebo
- https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(23)00299-2/fulltext

JAMA - 6/2023 - Direct oral anticoagulants vs low molecular weight heparin for VTE in pts with Cancer.

- In this pragmatic, noninferiority randomized clinical trial that included 638 patients from 67 centers with cancer and a new VTE, direct oral anticoagulants, compared with low-molecular-weight heparin, resulted in a recurrent VTE rate of 6.1% vs 8.8% at 6 months. The upper confidence limit around the difference was less than the noninferiority margin of 3%
- Among adults with cancer and VTE, direct oral anticoagulants were noninferior to low-molecular-weight heparin for preventing recurrent VTE over 6-month follow-up
- https://jamanetwork.com/journals/jama/article-abstract/2805894

CHEST - 1/2023 - PAP adherence for OSA management results in public health cost savings.

- Of 543 participants,
    - 25% were categorized as having high adherence,
    - 22% were categorized as having moderate adherence, and
    - 52% were categorized as having low adherence to PAP therapy.
- Average PAP use mean ± SD was 6.5 ± 1.0 h, 3.7 ± 1.2 h, and 0.5 ± 0.5 h for the high, moderate, and low adherence groups, respectively.
- The high adherence group had the lowest average covariate-adjusted 6-month health care costs ± SE ($3,207 ± $251) compared with the moderate ($3,638 ± $363) and low ($4,040 ± $304) adherence groups.
- Significant cost differences were observed between the high and low adherence groups ($832; 95% CI, $127 to $1,538); differences between moderate and low adherence were nonsignificant ($401; 95% CI, −$441 to $1,243)
- In participants with OSA, better PAP adherence was associated with significantly lower health care costs over 3 years
- https://journal.chestnet.org/article/S0012-3692(23)00132-0/fulltext?_ga=2.56602731.1576254595.1686880171-157670071.1684897143