PHYSICIAN'S WEEKLY
NEUROLOGY
Vol. IV • Issue No. 7 • September 2020
WWW.PHYSICIANSWEEKLY.COM

COVID-19 Dramatizes the Value of Rediscovering the Power of House Calls

Written by
Nazar Golewale, MD
Interventional Radiologist
Modern Vascular and Vein Center

I work with a practice called Housecall Doctors P.C. in Highland, IN, which has treated more than 6,500 homebound patients over the last decade. We're an interdisciplinary care team that goes beyond primary care to ensure access to specialty treatments. As a team, we deliver care where it is often unavailable, and the results have been remarkable. Within a 12-month period ending last August, we treated more than 1,000 patients, reduced emergency department usage by 77%, and cut hospital readmissions by 50%. Moreover, patient satisfaction scores increased from 17% to 84% after implementation of the program.

COVID-19 has caused some physicians, insurance companies, and even the federal government to take special notice of the power of care models that reach out to patients. CMS issued new rules at the onset of the pandemic to allow home health agencies (HHAs) to provide services to Medicare beneficiaries through telehealth and to treat patients in their homes who are suspected of contracting COVID-19 or who have a condition that makes them more susceptible to the virus. They also allow for more flexibility on who is eligible to receive home healthcare and which clinicians are allowed to deliver care.

This crisis could have a silver lining if it prompts us to create a smarter model: while hospitals treat the most acute cases, more sick patients could be treated in their homes, where they recover better and quicker. With buy-in from CMS and a growing number of insurance companies, I am optimistic that more practices like ours will open. My hope is that with the new CMS rules, and the innovation being spurred by this pandemic, more physicians will take up this powerful model of care in their own areas.

All it takes is a team of clinicians working together to get it started in your community. COVID-19 will undoubtedly change how we deliver care. I hope that we can take this as an opportunity to form new partnerships, cross specialty lines, and, in a sense, rediscover our roots in bringing care into people's homes.

The origin of the famous 'Tarzan Yell'

CONFERENCE
AAIC 2020
HIGHLIGHTS

New research was presented at AAIC 2020, the virtual Alzheimer's Association International Conference. The features below highlight some of the studies that emerged from the conference.

Influenza Vaccination & Reduced AD Incidence

With prevention remaining a valuable approach to fighting Alzheimer's disease (AD), due to the lack of efficacious treatments, researchers sought to statistically test the relationship between influenza vaccination and AD, with the hope of identifying a candidate for AD prevention. Using an EHR dataset of patients with an ICD-9 code indicating AD diagnosis, and excluding patients younger than 60, the study team assessed vaccinated and unvaccinated patients. To analyze the effects of frequency of vaccination, they divided the number of vaccinations by the length of time from the first vaccination timestamp to AD onset or the end of the observation. Influenza vaccination significantly decreased AD prevalence in the study population (odds ratio [OR], 0.8309), the frequency of influenza vaccine had a significant impact to inhibit AD onset (OR, 0.8736), and time-to-event analysis showed that receiving the influenza vaccine at an early age led to smaller AD risk when compared with receiving the vaccine at an older age, with a 1 year increase in first vaccination age associated with an increased hazard ratio of 1.0924. "This result provides evidence that influenza vaccination may be a confounding factor in epidemiological studies of risk factors of [AD]," write the study authors.

Phospho-tau217 as a Biomarker for AD

In order to evaluate whether cerebrospinal fluid (CSF) tau phosphorylated at threonine 217 (p-tau217) or plasma p-tau217 are even better biomarkers of Alzheimer's disease (AD) than p-tau181, study investigators compared CSF p-tau217 and CSF p-tau81 among a cohort of nearly 200 and evaluated plasma p-tau217 and plasma p-tau181 in three cohorts with 1,438 participants. CSF p-tau217 had stronger correlations with the tau-PET tracer and more accurately identified individuals with abnormal tau-PET scans than CSF P-tau181. CSF P-tau217 correlated better than p-tau181 with CSF and PET measures of neocortical amyloid-ß burden and more accurately distinguished AD dementia from non-AD neurodegenerative disorders. Antemortem plasma P-tau217 differentiated individuals with intermediate-to-high likelihood of AD according to neuropathology from those without AD and performed significantly better than plasma P-tau181. Plasma P-tau217 also differentiated clinical AD dementia from non-AD neurodegenerative diseases significantly better than plasma P-tau181, plasma neurofilament light, and established MRI measures, and similar to CSF P-tau217, CSF P-tau181, CSF Aß42/40, and tau-PET. Increased plasma P-tau217 was observed already in the pre-symptomatic stages of AD. In PSEN1 mutation carriers, the increase started at age 25, about 20 years prior to estimated onset of mild cognitive impairment. Plasma P-tau217 correlated with cerebral tau tangle densities in patients with neuritic plaques. It predicted abnormal tau-PET scans significantly better than plasma P-tau181, plasma neurofilament light, CSF P-tau181 and CSF Aß42/Aß40, and similar to CSF P-tau217.

Encouraging Results With Plasma Exchange

Plasma exchange treatments have been used for decades to treat various neurologic, immunologic, and metabolic disorders, with treatment including plasmapheresis, or the separation or plasma from blood cells and removal or toxic substances. The albumin in plasma, to which plasma amyloid beta is bound, is replaced with fresh albumin made from the plasma of healthy donors. Researchers hypothesized that by removing albumin together with amyloid beta and replacing it with a newer albumin periodically, they might be able to remove amyloid beta from the cerebrospinal fluid and eventually the brain. To test this hypothesis, they randomized men and women aged 55-85 with probable AD dementia to sham treatment or one of three doses of albumin and intravenous immunoglobulin replacement (equal amounts replaced as removed, half the amount replaced as removed, only albumin replaced). For 6 weeks, participants received weekly sham or conventional plasma exchange treatment of 2.5-3 liters of plasma, followed by 12 months of monthly, low-volume (700-800 mL) plasma exchange or sham treatments. With no clear differences between the three active-treatment groups, the Alzheimer's Disease Cooperative Study–Activities of Daily Living scale showed a 52% lower decline in change from baseline to 14 months in the plasma exchange-treated group, when compared with the sham group, while the Alzheimer's Disease Assessment Scale–Cognitive Subscale showed a 66% lower decline.

Early-Life Education Quality & Later Dementia Risk

For a study, researchers examined indicators of state-level administrative school quality as predictors of cognitive decline and dementia risk in later life across racial/ethnic groups by sex/gender. Participants included nearly 2,500 men and women who attended elementary school in the US who were followed for up to 21 years. After adjusting for age, childhood socioeconomic status, and state of childhood residence, higher early-life education quality was found to be associated with level and change in language performance across all groups, level of memory performance in black women, and change in memory for non-Hispanic white men and women and black women. Higher education quality was associated with lower dementia risk for non-Hispanic white women and black men and women, but it was not associated with dementia risk for non-Hispanic white men after accounting for covariates. When models included years of education, the influence of school quality on dementia risk, as well as level and change in memory and language performance, was fully attenuated for black men and partially attenuated for non-Hispanic white men and women and black women. "These findings provide evidence that later life brain health is influenced by early-life state educational policies," write the study authors.

Too Little or Too Much Sleep Ups AD Risk

With research indicating that sleep disturbances are common and on the rise and increasing awareness of the intricate link between sleep health and brain health, investigators assessed self-reported sleep traits—hours of nighttime sleep, daytime sleepiness, sleep apnea diagnosis, snoring, and napping—among more than 500,000 individuals who were free from Alzheimer's disease (AD) at baseline and followed for up to 12 years. When compared with those who slept an average of 6-9 hours per night, those who slept more than 9 hours had a higher risk of AD (hazard ratio [HR], 2.05) during a mean follow-up of 6.4 years. Sleep apnea (HR, 2.05) and daytime sleepiness (HR, 1.56) also raised the risk for AD significantly, with both remaining predictive of AD after controlling for sleep duration. However, no associations were observed between snoring and AD risk or between napping and AD risk. Among the 932 participants who developed AD during follow-up, the average time to diagnosis was more than 6 years, a possibly "significant window of time to intervene," said the lead author of the study.

33 CHARTS

Refusing Telemedicine – Can Patients Opt-out of Remote Care?

With the sweeping rise of COVID-19, telemedicine has taken healthcare by storm. During the local surges, this served as a mandated way of maintaining safe distancing. But as things come back to a new normal and as we decide where telemedicine fits in to a clinic structure, it might be worth asking: should patients have the option for in-person care? Is refusing telemedicine in favor of being physically seen a choice patients should be able to make? As we begin to settle in to a fixed role for telemedicine in the post-COVID world, centers are beginning to shape processes around telehealth.

Three assumptions that we make about patients and virtual encounters give shape to our policies:

ASSUMPTION OF APPROVAL | We assume that telemedicine is what patients prefer. The belief that patients prefer to be cared for in the context of their home isn't always the case. There may be sensitive issues or a hidden agenda that doesn't show well across a screen.

ASSUMPTION OF EQUIVALENCE | We assume that telemedicine is as good as in-person care. There is a bias to try to assess virtually some conditions that may best be assessed in real life. But, sometimes, medicine needs to be inconvenient.

ASSUMPTION OF CAPACITY | We assume the patient is able to participate in a virtual visit. Some families lack Internet access and equipment to complete a telemedicine visit. Tech insecurity is a bigger issue than thought initially when we started doing telemedicine.

There are many reasons why a patient may prefer an in-person visit. Our assumptions about the magic of telemedicine are not always right. While we should work to accommodate the preferences of the patient, patients need to understand that there are conditions and circumstances where an in-person visit is not necessary. And patients should be offered the right of refusing telemedicine.

Will our telemedicine policies pull us back to an imbalanced doctor-patient relationship? After the COVID dust falls, we need to create more structure that respects the interests and will of the patient. Telemedicine is a moving target. What works or doesn't work today may have a very different solution or experience a year from now. Flexibility and rapid reiteration of our processes will be critical to successful adjustment and growth.

Visit 33charts.com to read the full article.

Link Between Obesity and Dementia Gets Stronger

In older British patients, increased body weight and abdominal obesity increased the risks of developing dementia up to 15 years later, according to study results published in the *International Journal of Epidemiology*. In women aged 50 and older in particular, increased abdominal obesity was linked to a 39% increased risk of dementia compared with those with normal waist circumference, but the same effect was not seen in men..

For this study, Yixuan Ma, an MSc student, and colleagues included 6,582 participants from the English Longitudinal Study of Ageing (ELSA). All were older than 50 and dementia-free at baseline. Normal weight BMI was defined as 18.5-24.9 mg/m², and central obesity as a waist circumference (WC) of greater than 88 cm for women and greater than 102 cm for men. Dementia diagnoses were based on physician diagnosis, an overall score of greater than 3.38 on the Informant Questionnaire on Cognitive Decline in the Elderly (IQCODE) and Hospital Episodes Statistics (HES) data.

During the 15-years follow-up, 6.9% of subjects developed dementia. Those who developed dementia were older at baseline than those who did not (71.8 versus 61.9 years, respectively). Upon Cox proportional hazard regression analysis, participants with a BMI ≥30 kg/m² at baseline had a 35% greater risk of dementia (hazard ratio [HR], 1.35) compared with those who had a normal BMI. Even after controlling for hypertension and diabetes, the risk remained but was slightly lower (HR, 1.31).

Ma and colleagues found no evidence of any association between BMI and apolipoprotein E-ε4 (APOE-ε4), gender, hypertension, or diabetes. Upon sex-stratified analysis, they observed a 39% increased risk of dementia in women with abdominal obesity at baseline (HR, 1.39) compared with those who did not have abdominal obesity. In men, there were no associations between abdominal obesity and dementia (HR, 0.84). Participants who were obese and had a high WC had a 1.28-fold increase in the risk of dementia compared with those with normal BMIs and WCs, translating to a 28% higher risk. Finally, Ma and colleagues found an elevated risk of dementia in patients who were obese at baseline (HR, 1.34) that was independent of gender, age, APOE- ε4 level, education, physical activity, smoking, and marital status.