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Journal

Journal of Palliative Medicine, 24(1)

ISSN

1096-6218

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Publication Date

2021

DOI

10.1089/jpm.2020.0067

Peer reviewed

Original Articles

Feasibility of a Brief Intervention to Facilitate Advance Care Planning Conversations for Patients with Life-Limiting Illness in the Emergency Department

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Abstract

Background: Advance care planning (ACP) conversations are an important intervention to provide care consistent with patient goals near the end of life. The emergency department (ED) could serve as an important time and location for these conversations.

Objectives: To determine the feasibility of an ED-based, brief negotiated interview (BNI) to stimulate ACP conversations among seriously ill older adults.

Methods: We conducted a pre/postintervention study in the ED of an urban, tertiary care, academic medical center. From November 2017 to May 2019, we prospectively enrolled adults ≥65 years of age with serious illness. Trained clinicians conducted the intervention. We measured patients' ACP engagement at baseline and follow-up (3 ± 1 weeks) and reviewed electronic medical record documentation of ACP (e.g., medical order for life-sustaining treatment [MOLST]).

Results: We enrolled 51 patients (mean age = 71; SD 12), 41% were female, and 51% of patients had metastatic cancer. Median duration of the intervention was 11.8 minutes; few (6%) of the interventions were interrupted. We completed follow-up for 61% of participants. Patients' self-reported ACP engagement increased from 3.0 to 3.7 out of 5 after the intervention ($p < 0.01$). Electronic documentation of health care proxy forms increased (75%–94%, $n = 48$) as did MOLST (0%–19%, $n = 48$) during the six months after the ED visit.

Conclusion: A novel, ED-based, BNI intervention to stimulate ACP conversations for seriously ill older adults is feasible and may improve ACP engagement and documentation.

Keywords: advance care planning; behavioral intervention; brief negotiated interview; geriatrics; palliative care; serious illness

Introduction

Background

THE ABSENCE of advance care planning (ACP) conversations among older adults with serious, life-limiting illness (expected mortality of less than 12 months) can be common and may result in avoidable suffering and lower quality of life.[1–4] The percentage of patients with advanced cancer who report having ACP conversations, in which values and treatment preferences for serious illness and end-of-life care are discussed, varies significantly (18%–64%), with only 10% of patients on hemodialysis and 3%–11% of

stage III and IV heart failure patients reporting ACP conversations.[4–7] Most patients have multiple goals and priorities while living with serious illness, and without ACP conversations, many are at risk of receiving care discordant with their wishes.[8] Patients with advanced cancer who did not report having ACP conversations were three times as likely to be admitted to the ICU, seven times as likely to receive mechanical ventilation, and eight times as likely to receive attempted resuscitation within their last week of life as those who reported having these conversations.[3] ACP conversations are associated with lower probability of dying in the hospital, reduced stress, sustained reduction in anxiety and depression in surviving relatives, and higher likelihood of care provision that reflects patient goals and wishes.[9–11] However, only 21% of older adults presenting to the emergency department (ED) have advance directives in place.[12]

Importance

Within the last six months of life, 75% of older adults with serious illness visit the ED.[13] ED visits signal a rapid rate of decline in many patients' illness trajectories.[14–16] Although ACP ideally would have occurred before a medical crisis, ED visits can be an opportune time for older adults to start formulating and communicating their goals for future care. ED clinicians recognize this opportunity.[17] However, in the time-pressured ED environment, no feasible methods exist to engage seriously ill older adults in ACP.[18–20] Therefore, to overcome the barriers and take advantage of this teachable opportunity in the ED, we propose a brief ED-based intervention to motivate seriously ill older adults to complete ACP conversations after leaving the ED.

Goals of this investigation

We developed, refined, and tested a brief negotiated interview (BNI) intervention to motivate seriously ill older adults to engage in ACP conversations with their primary outpatient clinicians (Fig. 1).[21,22] BNI intervention is a short, scripted, motivational interview by a clinician that explores health behavior change with patients in a respectful, non-judgmental way. Using clinicians' compassionate curiosity to show respect for patient autonomy, the BNI creates patient engagement and trust in targeted behavior change.[23] BNI interventions are tailored to allow busy emergency clinicians to engage patients in addressing an important chronic care issue without conducting a time-consuming, sensitive conversation. In other studies, BNI interventions have demonstrated significant improvement in outcomes for ED patients with substance abuse disorders by helping patients understand the obstacles to and reasons for their medical care.[24–27] In this study, we sought to determine the feasibility of conducting a BNI intervention during usual ED care to engage seriously ill older adults in ACP conversations after leaving the ED.

Methods

Study design

In this feasibility study, we conducted a prospective, one-arm, pre/postintervention study in the ED in an urban, tertiary care, academic medical center. All participants provided verbal informed consent. The study protocol was approved by Partners Human Research Committee. Registration information is available at clinicaltrials.gov (Identifier: NCT03208530).

Participants

Participants were English-speaking adults 65 years and older with one or more serious illness (metastatic cancer, oxygen-dependent chronic obstructive lung disease, chronic kidney disease on dialysis, New York Heart Association class III or IV heart failure). For patients who did not meet the above criteria but were identified as having life-limiting illness, a member of the research team asked each patient's treating ED clinician if they would ''be surprised if this patient died in the next 12 months'' and included them in the study if the clinician stated that they ''would not be surprised.''[28] Only patients who were in individual patient rooms were considered for the study since the BNI intervention and outcome collection are technically difficult to conduct in hallways. Patients with clearly documented goals for medical care or with a medical order for life-sustaining treatment (MOLST) in the electronic medical record (EMR) were excluded. We also excluded patients determined to lack capacity or considered inappropriate by the treating clinicians (e.g., those in acute emotional or physical distress). During the first six months of the study, we recognized that hypoactive delirium or mild cognitive impairment may be prevalent among older adults in the ED and may not be detected during routine clinical encounters.[29–31] These conditions may inhibit adequate execution of an ACP conversation and may also result in difficulty with follow-up. Therefore, for the last 12 months of the study, we added screening for hypoactive delirium (failed inattention item on the validated 3D-CAM[32]) or mild cognitive impairment (score of ≤2 out of 5 on the Mini-Cog© Cognitive Impairment Assessment[33,34]) not recognized by ED clinicians and excluded patients who met either of these criteria. This iterative and adaptive process was in line with the features of a feasibility study.[35]

Procedures

We used convenience sampling from 7 am to 6 pm, two to five days each month to recruit patients in the ED and ED observation unit from November 2017 to May 2019. Trained research assistants (RAs) identified potential participants using the EMR and confirmed initial eligibility with treating clinicians. After verbal consent was obtained from eligible patients, RAs collected responses to the ACP engagement survey as a baseline assessment. For the last 12 months of the study, RAs conducted additional screening and exclusion for cognitive impairment and hypoactive delirium before collection of this survey. A trained physician or physician assistant who was not a member of the patient's treatment team then administered the BNI. More in-depth description of the initial development and testing of the BNI intervention have been described previously.[21,22]

At the conclusion of the intervention, subjects received a sheet depicting helpful questions to discuss with their primary outpatient clinician. We videorecorded all encounters. Follow-up assessments were conducted through telephone or self-addressed envelope containing the questionnaires after three weeks (±1 week). Four open-ended questions were also asked about barriers to completing ACP conversations after leaving the ED. Participants were compensated with $15 and a certificate of participation.

FIG. 1. BNI script. BNI, Brief negotiated interview.

Measures/outcomes

Feasibility outcomes. We used the standardized feasibility study framework previously described.[35]

Feasibility of recruitment and retention:

1. Enrollment: >50% of eligible patients in the ED are willing to participate
2. Retention: >50% of enrolled patients are able to complete the outcome assessment.

Feasibility of conducting the intervention

1. Terminations of the intervention: >50% of enrolled patients complete the intervention once initiated in the ED (e.g., not terminated due to clinical decline, etc.).
2. Interruption of the intervention: >50% of the interventions are interrupted less than twice before completion.

3. Duration of the intervention: >50% of the interventions are conducted in less than 10 minutes.

Patient-centered outcomes

Our primary patient-centered outcomes were attitude and actions for ACP related to serious illness measured by a validated four-item ACP Engagement survey before and three weeks (±1 week) after our BNI intervention (Cronbach's α for English-speaking subjects = 0.86).[36] The ACP Engagement survey was previously validated for similar studies to test patient responses to ACP interventions.[36–38] The ACP engagement survey uses five-point Likert scale responses to measure patient readiness for ACP conversations (Table 1).[37,39] We calculated descriptive and summary

TABLE 1. PRE/POSTINTERVENTION CHANGES IN PATIENT'S SELF-REPORTED ADVANCE CARE
PLANNING ENGAGEMENT AND ELECTRONIC MEDICAL RECORD DOCUMENTATION

ACP engagement survey, five total points[a]	Preintervention mean score (SD)	One-month postintervention mean score (SD)	p
Item 1: How ready are you to sign official papers naming a person or group of people to make medical decisions for you? (n=28)	4.5 (1.0)	4.8 (0.7)	0.06
Item 2: How ready are you to talk to your decision maker about the kind of medical care you would want if you were very sick or near the end of life? (n=27)	4.4 (1.1)	4.6 (0.9)	0.17
Item 3: How ready are you to talk to your doctor about the kind of medical care you would want if you were very sick or near the end of life? (n=28)	3.0 (1.3)	3.7 (1.3)	<0.01
Item 4: How ready are you to sign official papers putting your wishes in writing about the kind of medical care you would want if you were very sick or near the end of life? (n=24)	3.3 (1.6)	4.1 (1.3)	0.06
Composite (n=24)	3.8 (0.8)	4.3 (0.9)	0.02

EMR documentation (n=48, IRR=98%)	Preintervention, no. of patients (%)	Six-month postintervention, no. of patients (%)
Health care proxy form	36 (75%)	47 (94%, 67% of whom were admitted to the hospital)
MOLST form	0 (0%)	9 (19%, all of whom were admitted to the hospital)

Median intervention duration was 11.8 minutes (±4.4 minutes) with three interruptions during the entire study.
[a]1. "I have never thought about it."
2. "I have thought about it, but I am not ready to do it."
3. "I am thinking about doing it in the next 6 months"/"I am thinking about doing it over the next few visits."
4. "I am definitely planning to do it in the next 30 days"/"I am definitely planning to do it at the next visit."
5. "I have already done it."
ACP, advance care planning; EMR, electronic medical record; IRR, interrater reliability; MOLST, medical order for life-sustaining treatment; SD, standard deviation.

statistics for all participants. We used an average of the four-item responses for each subject to create a composite ACP score and performed item-by-item analysis of the ACP engagement survey to understand the components within the composite measure. Pre–post analysis was conducted using Wilcoxon's signed-rank tests to detect the change in the composite ACP engagement score as well as change for individual items. We considered a p-value of 0.05 to be statistically significant.

Our secondary patient-centered outcomes were: (1) qualitative follow-up responses to open-ended questions asking about reasons for presence or absence of ACP-related actions after leaving the ED at one month, and (2) ACP documentation in the EMR (new health care proxy and MOLST forms) within six months of the intervention. Qualitative responses were collected and recorded during a phone conversation. ACP documentation was collected by two RAs who were trained to complete chart abstraction using a refined abstraction codebook.[40] To assess interrater reliability (IRR), 10% of the subjects' records (n=5) were assessed by both reviewers. The reviewers resolved discrepancies by consensus (IRR=98%).

Results

Feasibility assessment

We approached 109 patients and 49 declined to participate. The most common refusal reasons were fatigue or feeling overwhelmed. The last 35 patients were screened for delirium and cognitive impairment. Nine patients were later found ineligible for participation. One failed the delirium screening, five failed the cognitive impairment assessments, and three were withdrawn for worsened clinical condition and/or changed their minds before the intervention. We enrolled 51 patients with mean age of 71 years (SD 12), 41% were female, and 51% of patients had metastatic cancer (Table 2). Clinicians spent a median of 11.8 minutes to complete the intervention, with 33% (17/51) in less than 10 minutes. Three interventions (6%) were interrupted, while no intervention was terminated completely. Among those who received the intervention, two died before the follow-up assessment, and three were withdrawn after the intervention because of increased burden of progressive serious illness after leaving the ED. Of the remaining 46 patients, 16 (35%) were lost to follow-up. During follow-up, 28 (61%) completed the ACP engagement survey and the open-ended questionnaires. The reasons for loss to follow-up included death (n=2), patient refusal (e.g., "I am too tired from being hospitalized," n=3), and difficulty reaching them, despite having several forms of contact information and scheduled appointments (n=16). Trained RAs performed chart abstraction to record changes in ACP documentation within six months of the intervention for the 48 patients who received the intervention and did not withdraw from the study. A detailed enrollment flowsheet can be found in Figure 2.

TABLE 2. PATIENT DEMOGRAPHICS

Characteristics (N = 51)	
Mean age in years (SD)	71.09 (12.6)
Sex	n (%)
Female	21 (41)
Race	n (%)
White	44 (86)
Black/African American	5 (10)
Asian	0 (0)
Other	2 (4)
Ethnicity	n (%)
Hispanic/Latino	3 (6)
Non-Hispanic/Latino	48 (94)
Life-limiting illness	n (%)
Metastatic cancer	26 (51)
Oxygen-dependent COPD	3 (5.9)
CKD on dialysis	5 (9.8)
Stage 3 or 4 heart failure	4 (7.8)
<12-Month mortality	13 (25.5)
ED disposition (n = 48)	n (%)
Admitted to inpatient	31 (65)
Admitted to observation	7 (14)
Discharged	10 (21)

CKD, chronic kidney disease; COPD, chronic obstructive pulmonary disease; ED, emergency department.

Primary patient-centered outcomes

The composite ACP engagement score increased from 3.8 to 4.3 out of 5 one month after the intervention ($p = 0.02$). In an item-by-item analysis (Item 3), self-reported readiness increased from 3.0 to 3.7 ($p = 0.01$, Table 1).

Secondary patient-centered outcomes

Three weeks following the intervention, 30 patients (59%) answered the open-ended questions (Table 3). The most common reason for deferral was fatigue from the burden of serious illness after leaving the ED. Responses to Question 1 identified several potential barriers to completion of ACP conversations. Eighteen patients (60%) answered that they had not spoken to their primary doctor. Common reasons included communication gaps among multiple outpatient clinicians ($n = 7$), primary focus on immediate health concerns like medication adjustment ($n = 6$), and lack of scheduled appointment before follow-up ($n = 5$). In response to Question 2, 25 patients (83%) answered "yes," commonly stating that these ACP conversations were perceived positively, and the family knew and understood the patient's wishes. Question 3 demonstrated a potential area of improvement, with only 10 patients (34%) answering that they had reviewed the resource. Patients who reviewed the materials stated that they would like more specific questions.
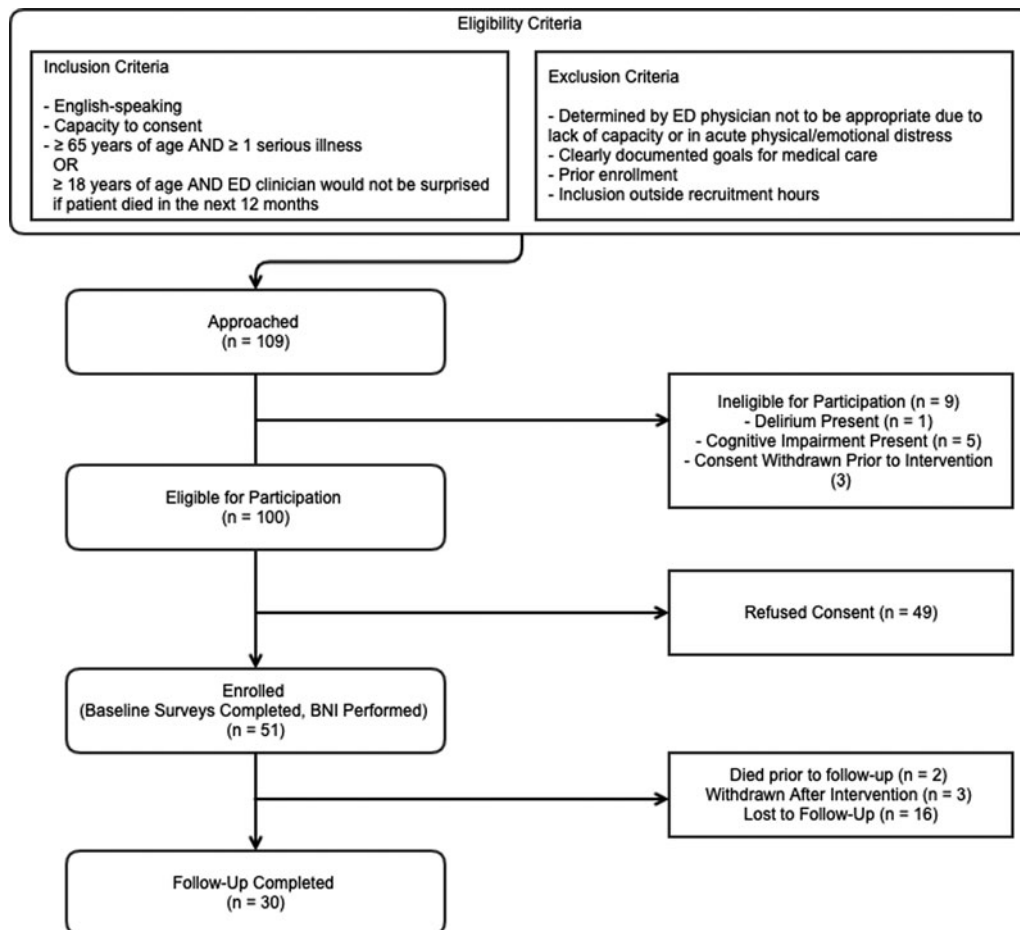

FIG. 2. Study flow chart.

TABLE 3. QUALITATIVE QUESTIONS

No.	Prompt
1	After leaving the ED, have you talked to your primary doctor about what care you would like in the future? **(Yes)** Would you mind telling us a little bit about that conversation? **(No)** We are trying to better understand some of the reasons around why people don't speak to their primary doctor about these issues. Would you mind telling us through some of the reasons that influenced you around not having this discussion?
2	After leaving the ED, have you talked to your family/ loved ones about what care you would like in the future? **(Yes)** From your perspective, how did that conversation go? **(No)** We are trying to better understand some of the reasons around why people don't speak to their family or loved ones about their future care. From your perspective, what types of things come to mind when you think about not wanting to have this discussion?
3	One of the resources that we gave you was a list of questions about your care, have you gone through that list since you left the ED? **(Yes)** Can you tell me a bit more about when/why you looked over the paper? **(No)** Was there anything that could be improved about the list of question that would make it more useful to you?
4	Is there anything we can do to make discussions about your care in the future easier? **(Yes)** Please specify **(No)** Is there anything else we should consider as we try to encourage other people to discuss their care in the future?

Among those who did not review the list, many stated that they did not remember receiving it or that it was misplaced after leaving the hospital. In response to Question 4, 22 (73%) answered ''no.'' These patients reported satisfaction with the intervention and stated that it was ''good'' or ''easy.'' Several patients stated that the process could be improved if their primary outpatient clinicians initiated the ACP conversations. One patient reported a negative response to the intervention and stated that the discussion was ''too vague'' and ''not motivational.'' Trained RAs both reviewed five (10%) of the total subjects' EMR to assess IRR for chart abstraction data. The EMR documentation of health care proxy form (75%–94%) and MOLST form (0%–19%) increased during the six months after the intervention (during the index or subsequent visits), mostly in patients who were admitted (IRR 98%, Table 1).

Discussion

Among the seriously ill older adults who were approached and met our eligibility criteria in the ED, 51 patients (51%) completed our intervention (median intervention time 11.8 minutes), and 61% of them completed the follow-up survey after one month. Patient's self-reported ACP engagement increased from 3.0 to 3.7 out of 5 after the intervention ($p < 0.01$, Item 3, Table 1). Patients were more ready to have ACP conversations with family members (83%) than their

primary care physicians (40%) during the first month after the intervention. The EMR documentation of health care proxy form (75%–94%) and MOLST form (0%–19%) increased during the six months after the intervention, mostly in patients who were admitted (IRR 98%, Table 1). A brief intervention to engage seriously ill older adults to complete ACP conversation is feasible and may increase patient's ACP engagement after leaving the ED.

This is the first study to demonstrate the feasibility of using BNI to motivate engagement in ACP conversations among seriously ill older adults during their ED visits.[22] Although similar studies have attempted to utilize the motivational interview structure in palliative and end-of-life settings, our study is the first to use the ED.[41–45] While outpatient settings may be more appropriate for completion of ACP conversations, the ED serves as an important inflection point of illness trajectory for many seriously ill older adults. Our BNI intervention may serve as an important step to facilitate completion of ACP conversations in these other settings.[16] In the future, we will consider adding hand-off documentation to inpatient teams after our intervention to facilitate further communication and ACP documentation.

This is also the first study to use the ACP engagement survey to detect the impact of an ACP intervention in the ED. The ACP engagement survey includes responses centered around the stages described by the transtheoretical model of behavior change (precontemplation, contemplation, preparation, action, maintenance) to measure patients' engagement with and movement between stages of ACP.[46] This model has previously been described as an important framework for ACP conversations and allows for the recognition of potential patient-perceived barriers to ACP and their subsequent address.[47–49] Our findings suggest that our intervention may guide patients toward the next stage in the ACP behavior change process.

We also learned that close attention to cognitive impairment assessment, compensation for participants at the time of outcome assessment, and use of multiple modalities to complete the follow-up are critical to improving the recruitment and retention of this population in the ED. Given that patients did not recall the paper resource we provided to them, in the future we should consider alternative methods to provide this information. The physical and emotional burden of an ED visit/hospitalization may necessitate alternative methods (i.e., postal mail, email) for delivery of this resource.[50]

Participant compensation and multiple modalities for follow-ups are necessary to motivate participants to complete the required follow-ups at their convenience.[51,52] Further refinement of the intervention is necessary to improve its potential efficacy and scalability. The intervention in this study averaged 11.8 minutes to complete, with 17 (33%) interactions completed in less than 10 minutes. While this might be ideal in nonemergency settings, the mean time to interruption for emergency physicians is 6.4 minutes.[53] Therefore, this specific feasibility criterion (duration of the intervention: >50% of the intervention are conducted in less than 10 minutes) was the sole criterion not met in this study.

Our intervention is at the stage IB preliminary testing stage of the Stage Model for Behavioral Intervention Development,[54] which necessitates ''best possible setting'' to test its potential efficacy. To improve the potential efficacy and scalability for future Phase III and IV studies, further

intervention refinement is needed to shorten the intervention duration, include patients with cognitive impairment and their caregivers, and consider alternative models to deliver the intervention (e.g., mimic the specialized board certification process of Sexual Assault Nurse Examiners [SANE] to provide higher quality of care[55–57]). ACP CPT codes 99497 and 99498, established in 2016 by the Centers for Medicare and Medicaid Services, reimburse for ACP conversations. The reimbursement amounts range from $75 to $106 (1.40–1.50 RVUs) and may help to ensure sustainability of this intervention.[58,59] Furthermore, the population-level impact of providing earlier, better, and more frequent ACP conversations will likely lead to not only delivering goal-concordant care, but also may result in an overall reduction in health care expenditure.[8–11,60,61]

Limitations

This was a single-site study, utilizing a small sample of patients, and patient population may affect the feasibility. Using specifically trained clinicians to administer the intervention outside of their normal clinical duties may require implementation considerations in the future. Future testing will address these implementation challenges. Given that our intervention is in stage 1B (preliminary testing stage) of the Stage Model for Behavioral Intervention Development, where any signal toward the desired outcome is valuable, implementation/dissemination concerns are outside the scope of this study.[54] Enrollments during the first six months ($n = 25$) of the study did not include a process for screening and excluding patients with cognitive impairment or delirium. Inclusion of patients with mild cognitive impairment or hypoactive delirium undetected by ED clinicians could have negatively impacted our follow-up rates and biased our results toward null. As a feasibility study intended to demonstrate the feasibility of administering and studying our intervention for future studies, the necessity of cognitive impairment and delirium screening was a worthwhile discovery. Once this work has been completed, we plan to develop strategies in the future to include patients with cognitive impairment and their caregivers.

Conclusion

A brief ACP intervention is feasible to engage seriously ill older adults to complete ACP conversations after leaving the ED, however, efficiency and timing must be addressed in future studies. Our results indicate that patients are willing to participate in this intervention and that the intervention has the potential to increase self-reported ACP engagement, which may be a precursor to ACP execution. Examination of the efficacy of this intervention requires further study.

Author Disclosure Statement

No competing financial interests exist.

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