Figure. Ladder Diagram



The varying PR intervals between alternating beats in the electrocardiogram are suggestive of atrial bigeminy with tachycardia. The dashed arrows indicate the shorter PR interval of the ectopic beat; the solid arrows, the longer PR interval of the first beat in each group; the asterisks, the position of the sinus P wave; a, the position of the ectopic P wave.

denote the same here in the form of a ladder diagram (Figure). In leads aVR and V₁, the ectopic beat is observed as an upright P wave occurring before the QRS complex of the ectopic beat. An atrial bigeminy rhythm is normally thought to be benign. However, it can cause tachycardia,³ and in patients with underlying cardiac disease, it may result in hemodynamic instability.

Chakrapani Mahabala, MD Sushmita R. S. Upadhya, MBBS Ashraf Malik, BSc, MBBS

Author Affiliations: Department of Internal Medicine, Kasturba Medical College, Mangalore, Manipal Academy of Higher Education, Manipal, India (Mahabala); Kasturba Medical College, Mangalore, Manipal Academy of Higher Education, Manipal, India (Upadhya); Kasturba Medical College, Mangalore, Manipal Academy of Higher Education, Manipal, India (Malik).

Corresponding Author: Chakrapani Mahabala, MD, Department of Internal Medicine, Kasturba Medical College, Mangalore, Manipal Academy of Higher Education, Manipal, India (chakrapani.m@manipal.edu).

Published Online: December 14, 2020. doi:10.1001/jamainternmed.2020.7113

Conflict of Interest Disclosures: None reported

 Choxi R, Teigeler T, Shepard R. Irregular narrow complex tachycardia: buy one, get one free. JAMA Intern Med. 2020;180(9):1242-1243. doi:10.1001/ jamainternmed.2020.1506

2. Fitzpatrick JK, Goldschlager N. A case of narrow complex bigeminy, what is the underlying rhythm? *J Electrocardiol*. 2018;51(3):379-381. doi:10.1016/j. jelectrocard.2018.03.005

3. Forclaz A, Derval N, Nault I, et al. Atrial bigeminy with recurrent supraventricular tachycardia. *J Cardiovasc Electrophysiol*. 2010;21(10):1181-1183. doi:10.1111/j.1540-8167.2010.01783.x

In Reply This letter is written as a reply to the astute Letter to the Editor written by Mahabala and colleagues offering atrial bigeminy as another differential diagnosis regarding a regularly irregular narrow complex tachycardia presented in our Challenge in Clinical Electrocardiography.¹ The authors inter-

pret the electrocardiogram (ECG) presented in the article¹ and highlight the possibility of atrial bigeminy with a sinus P wave with a PR interval of 240 milliseconds followed by an ectopic P wave with a shorter PR interval of 160 milliseconds, as summarized in their ladder diagram.

We posit dual atrioventricular nodal nonreentrant tachycardia to be more likely, as there is no discernable P wave during the short RR interval. There are differences in repolarization according to the preceding RR interval; however, the only P wave occurs in the longer RR interval. Telemetry from this patient's hospitalization captured the tachycardia termination. The ST segments during tachycardia and at termination of tachycardia are identical, supporting the case that there is no buried P wave. Additionally, it would be atypical for the decremental conduction properties of the AV node to conduct the early beat faster to the ventricles than after the longer RR interval.² Additional observation on telemetry during the same hospitalization captured events where P waves blocked in the fast pathway and conducted only down the slow pathway with a constant PR interval of 527 ms.

We thank the authors for their expansion of the differential diagnosis, and we do not have an atrial electrogram on electrophysiologic study or an atrial lead from a device interrogation during tachycardia to reference as a gold standard. With proof of a slow pathway, no discernable P waves during the short RR interval, and that the early beats should actually conduct with a longer PR interval, we favor dual atrioventricular nodal nonreentrant tachycardia over atrial bigeminy.¹

Ravi Choxi, DO Todd Teigeler, MD Richard Shepard, MD

Author Affiliations: Department of Internal Medicine, Virginia Commonwealth University, Richmond, Virginia (Choxi, Teigeler, Shepard); Division of Cardiology, Virginia Commonwealth University, Richmond, Virginia (Teigeler, Shepard).

Corresponding Author: Ravi Choxi, DO, Department of Internal Medicine, Virginia Commonwealth University, 1250 E Marshall St, Richmond, VA 23219 (ravi.choxi@vcuhealth.org).

Published Online: December 14, 2020. doi:10.1001/jamainternmed.2020.7078

Conflict of Interest Disclosures: None reported.

 Choxi R, Teigeler T, Shepard R. Irregular narrow complex tachycardia: buy one, get one free. JAMA Intern Med. 2020;180(9):1242-1243. doi:10.1001/ jamainternmed.2020.1506

2. Mani BC, Pavri BB. Dual atrioventricular nodal pathways physiology: a review of relevant anatomy, electrophysiology, and electrocardiographic manifestations. *Indian Pacing Electrophysiol J.* 2014;14(1):12-25. doi:10.1016/S0972-6292(16)30711-2

Implementing Group-Based Pelvic Floor Muscle Training in Clinical Practice

To the Editor In a randomized controlled noninferiority trial, Dumoulin et al¹ demonstrated that group-based pelvic floor muscle training (PFMT) was noninferior to individual PFMT for its efficacy in treating elderly women with stress or mixed urinary incontinence. In general, a poor-quality study can introduce bias that underestimates the intertreatment differences, easily leading to an apparent noninferiority conclusion that may be incorrect. Therefore, particular attention

jamainternalmedicine.com

should be paid to how the noninferiority study was planned and implemented. This study has a refined protocol that conforms to the guidelines,² and it was very well implemented, especially for the following 2 points. First, the margin of noninferiority was set at 10% difference in this study, which was reasonably clinically meaningful, and it was prespecified in the trial protocol. Second, the dropout rate was 13% in the group-based PFMT arm and 10% in the individual PFMT arm at 1 year follow-up, which were low enough to decrease the bias favoring noninferiority caused by significant dropouts. Moreover, adherence to intervention was also high. In terms of those criteria, this study was well-designed and conducted with high quality, thus the conclusion of noninferiority was trustworthy.

As clinicians, we have 2 additional comments, regarding the transparency in reporting the results and clinical relevancy. First, only 7% of participants in the group-based PFMT arm reported having difficulty with PFM exercise and hence requested private sessions. Nonetheless, it seems that for these patients, individual PFMT might have a greater effect and might be more suitable than group-based PFMT. Therefore, providing the baseline characteristics and their outcomes may help clinicians choose group-based PFMT or individual PFMT for appropriate patients wisely in clinical practice. Second, considering that the authors mentioned that they obtained the intervention cost data, it would be more impressive if they could show a brief cost-effectiveness analysis simultaneously in this article. In a noninferiority study, it is necessary to provide the advantages beyond primary outcome for the targeted intervention.³ Although the authors pointed out that the strength of the group-based approach is its high efficiency, as it increases the number of patients being treated at the same time, there were no details about saving time in group-based PFMT compared with individual PFMT. It would be informative to show how much financial and human resources were saved in group-based PFMT. Although this study is already excellent, providing further information on the above points would help it accommodate clinicians' needs and facilitate clinicians applying the results in clinical practice.

Satoshi Funada, MD Yan Luo, MD

Author Affiliations: Department of Urology, Kyoto University Graduate School of Medicine, Kyoto, Japan (Funada); Department of Health Promotion and Human Behavior, Kyoto University Graduate School of Medicine and School of Public Health, Kyoto, Japan (Funada, Luo).

Corresponding Author: Satoshi Funada, MD, Department of Urology, Kyoto University Graduate School of Medicine, 54 Shogoinkawahara-cho, Sakyo-ku Kyoto 606-8507, Japan (sfunada@kuhp.kyoto-u.ac.jp).

Published Online: December 14, 2020. doi:10.1001/jamainternmed.2020.7116

Conflict of Interest Disclosures: Dr Funada reported grants from the Ministry of Education, Culture, Sports, Science and Technology of Japan. No other disclosures were reported.

1. Dumoulin C, Morin M, Danieli C, et al; Urinary Incontinence and Aging Study Group. Group-based vs individual pelvic floor muscle training to treat urinary incontinence in older women. *JAMA Intern Med*. 2020;180(10):1284-1293. doi: 10.1001/jamainternmed.2020.2993

2. The International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use. Choice of control group and related issues in clinical trials. July 20, 2000. https://database.ich.org/sites/default/files/E10_Guideline.pdf.

3. Piaggio G, Elbourne DR, Pocock SJ, Evans SJW, Altman DG; CONSORT Group. Reporting of noninferiority and equivalence randomized trials: extension of the CONSORT 2010 statement. *JAMA*. 2012;308(24):2594-2604. doi:10.1001/ jama.2012.87802

In Reply We are grateful to Funada and Luo for raising the important question of the baseline characteristics and outcomes of the participants in the group-based pelvic floor muscle training (PFMT) arm of our Original Investigation¹ who requested a 20-minute private session. The baseline characteristics of the subgroup of 12 participants who requested 1 private session with the physiotherapist to improve their understanding and capacity to contract their pelvic floor muscle (PFM) during PFM exercises were not significantly different from those of the other 166 women in the group-based intervention arm who did not request an individual assessment.

Furthermore, urinary incontinence-specific outcomes of the subgroup at 1 year were not significantly different from those of the main study group (group-based intervention arm). Therefore, for these 12 participants, group-based PFMT was a suitable intervention. A secondary analysis to examine potential predictors of group-based physiotherapy success is underway. It will include baseline demographic characteristics, duration and severity of symptoms, and pelvic floor morphometry and function before intervention. Results of these analyses could help clinicians identify participants who are more likely to benefit from group-based PFMT in clinical practice.

As reported by Funada and Luo, we state that we have obtained the intervention cost data in the study protocol² and article presenting the results.¹ However, these data were not published in the *JAMA Internal Medicine* paper due to word count limitations. Cost-analysis results were presented at the International Continence Society annual meeting last year and published as a conference abstract.³ The article on costeffectiveness is being prepared and should be submitted for publication before the end of the year.

Chantale Dumoulin, PhD Licia Cacciari, PhD Marie-Hélène Mayrand, MD, PhD

Author Affiliations: School of Rehabilitation, Faculty of Medicine, Université de Montréal, Montréal, Qubec, Canada (Dumoulin, Cacciari); Research Center of the Centre Hospitalier de l'Université de Montréal, Department of Obstetrics and Gynecology and Social and Preventive Medicine, Université de Montréal, Montréal, Qubec, Canada (Mayrand).

Corresponding Author: Chantale Dumoulin, PhD, School of Rehabilitation, Faculty of Medicine, Université de Montréal, 4565, Chemin Queen-Mary, Montréal, QC H3W 1W5, Canada (chantal.dumoulin@umontreal.ca).

Published Online: December 14, 2020. doi:10.1001/jamainternmed.2020.7110

Conflict of Interest Disclosures: None reported.

1. Dumoulin C, Morin M, Danieli C, et al; Urinary Incontinence and Aging Study Group. Group-based vs individual pelvic floor muscle training to treat urinary incontinence in older women: a randomized clinical trial. *JAMA Intern Med*. 2020;180(10):1284-1293. doi:10.1001/jamainternmed.2020.2993

2. Dumoulin C, Morin M, Mayrand M-H, Tousignant M, Abrahamowicz M. Group physiotherapy compared to individual physiotherapy to treat urinary

406 JAMA Internal Medicine March 2021 Volume 181, Number 3

incontinence in aging women: study protocol for a randomized controlled trial. *Trials*. 2017;18(1):544. doi:10.1186/s13063-017-2261-4

3. Cacciari LP, Vale L, Morin M, et al Economic evaluation of group-based vs. individual pelvic floor physiotherapy for urinary incontinence in older women. *Neurourology and Urodynamics*. 2019;38:5233-5235. https://www.ics.org/2019/abstract/270.

Protein Intake and Cause-Specific Mortality

To the Editor We appreciate the meticulous work performed by Huang et al¹ in the Original Investigation "Association Between Plant and Animal Protein Intake and Overall and Cause-Specific Mortality," recently published in *JAMA Internal Medicine*. However, there are some issues to which we wish to draw attention.

First, plant proteins come as a composite food together with other nutritive parts, such as fiber and polyphenols. Emerging evidence shows that these components could be independently associated with the course and mortality of many chronic diseases, such as diabetes, cancer, and heart diseases.^{2,3} For example, data show a highly significant interplay between diet; consumption of fiber, including plant protein fiber; the gut microbiota; and the incidence and progression of many chronic diseases.⁴ In a recent study,³ consumption of dietary fiber and fiber from beans, which are also high in protein, were associated with lower all-cause mortality. Therefore, considering that plant proteins are always combined with other components, the observed association could not wholly be attributed to the amount of plant protein consumed. The other nutritive components, which have been found to greatly influence the course of cancer and other chronic diseases, may have a more significant association with outcomes.

Second, not all parts of animal protein are consumed. The edible parts (muscle meat) are chemically different from the nonedible parts in terms of the amino acid glycine. Accumulating evidence strongly suggests that glycine is an essential novel anti-inflammatory immunonutrient, a deficiency of which forms the root of all chronic inflammation-related diseases.⁵ The evidence thus suggests that this seemingly minute singular difference in amino acid, due to differences in the portion consumed, accounts for a significant difference in physiological effects. In this way, although animal protein contains the important nutrient glycine, those who consume animal protein are often robbed of its benefit because it is contained in a portion that is often not consumed. Therefore, instead of measuring whole animal protein, which may be misleading, it is more useful to measure and relate the consumed portions (muscle meat and/or bones/collagenous portions), as that would account for the functional component consumed.

Zhengyu Ren, BA William Kwame Amakye, MA Maojin Yao, PhD

Author Affiliations: University of South China School of Pharmaceutical Science, Hengyang, China (Ren); State Key Laboratory of Respiratory Disease, Guangzhou Institute of Respiratory Health, the First Affiliated Hospital of Guangzhou Medical University, Guangzhou, Guangdong, China (Ren, Yao); South China University of Technology School of Food Science and Engineering, Guangzhou, China (Amakye).

Corresponding Author: Maojin Yao, PhD, State Key Laboratory of Respiratory Disease, Guangzhou Institute of Respiratory Health, the First Affiliated Hospital of Guangzhou Medical University, 195 Dongfeng W Rd, Guangzhou, Guangdong 510182, China (maojin.yao@aliyun.com).

Published Online: December 21, 2020. doi:10.1001/jamainternmed.2020.7257 Conflict of Interest Disclosures: None reported.

1. Huang J, Liao LM, Weinstein SJ, Sinha R, Graubard BI, Albanes D. Association between plant and animal protein intake and overall and cause-specific mortality. *JAMA Intern Med*. 2020;180(9):1173-1184. doi:10.1001/ jamainternmed.2020.2790

2. Semba RD, Ferrucci L, Bartali B, et al. Resveratrol levels and all-cause mortality in older community-dwelling adults. *JAMA Intern Med*. 2014;174(7): 1077-1084. doi:10.1001/jamainternmed.2014.1582

3. Katagiri R, Goto A, Sawada N, et al. Dietary fiber intake and total and cause-specific mortality: the Japan Public Health Center-based prospective study. *Am J Clin Nutr.* 2020;111(5):1027-1035. doi:10.1093/ajcn/nqaa002

4. Bultman SJ. Interplay between diet, gut microbiota, epigenetic events, and colorectal cancer. *Mol Nutr Food Res*. 2017;61(1). doi:10.1002/mnfr.201500902

5. Zhong Z, Wheeler MD, Li X, et al. L-Glycine: a novel antiinflammatory, immunomodulatory, and cytoprotective agent. *Curr Opin Clin Nutr Metab Care*. 2003;6(2):229-240. doi:10.1097/00075197-200303000-00013

In Reply We thank Ren and colleagues for their comments regarding our recent Original Investigation.¹ The issues of complex nutritional components (including protein) in foods do have biological implications and can in part be addressed through statistical analyses, comparison of risk patterns, and interpretation.

We agree with the authors that protein in plant-based foods is consumed along with the other bioactive nutrients such as fiber, polyphenols, and antioxidants, and that these nutritive parts may also be associated with the outcomes of chronic diseases. In our multivariable models, we adjusted for several potential confounding factors, including dietary fiber, fruits and vegetables, and the inverse associations between plant protein, and when these were controlled for overall and cardiovascular disease (CVD) mortality remained unchanged.¹ On the other hand, the pattern of the inverse associations we observed for plant protein intake and specific causes of mortality differ somewhat from those for other bioactive dietary components.^{2,3} For example, in the study² mentioned by the authors, higher dietary fiber intake was significantly associated with reduced risk of overall and cause-specific mortality, including CVD, respiratory disease, and injury mortality for both sexes, and cancer mortality in men only. Additionally, our recent prospective serological analysis of the antioxidant betacarotene based on outcomes for 29000 men in the Alpha-Tocopherol, Beta-Carotene Cancer Prevention Study found that elevated beta-carotene concentration was associated with reduced overall mortality, as well as reduced mortality from CVD, heart disease, stroke, cancer, diabetes, respiratory disease, and other causes.³ If these dietary components were responsible for the plant protein intake-mortality inverse association, we might expect broader and more similar risk patterns across the specific causes of death, yet such associations for mortality from cancer, respiratory disease, or injuries/accidents were not observed in either sex.¹ Instead, we found significant inverse

jamainternalmedicine.com