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Appendix Table 1. Participant Inclusion and Exclusion Criteria

Inclusion Criteria for Cases and Controls

- At least 18 years of age
- Have 10 or more teeth

Inclusion Criteria for Cases Only

- Echocardiography results consistent with possible IE
- Blood culture-positive bacterial IE
- Meets Modified Duke criteria for IE

Inclusion Criteria for Controls Only

- Outpatients at the site hospital echocardiography laboratory found to have an echocardiography-confirmed abnormality (e.g., valvular stenosis or regurgitation) that classifies them as being in the 2007 AHA-confirmed moderate risk group. Common examples of moderate risk patients include those with unoperated bicuspid aortic valve disease, mitral valve prolapse or rheumatic valvular heart disease and no prior history of endocarditis.

Exclusion Criteria for Cases and Controls

- Pregnant
- Currently incarcerated
- Unable to complete the study procedures, in the opinion of the site study investigators.
- In the 30 days before the echocardiogram (controls) or the diagnosis of IE (cases):
 - Received intravenous therapy at home
 - Received wound care or specialized nursing care through a health care agency, family, or friends
- Received hemodialysis treatment or intravenous chemotherapy in the 30 days before the echocardiogram (controls) or the diagnosis of IE (cases)
- Having a long-term intravascular catheter (e.g., for chemotherapy, parenteral nutrition, or hemodialysis)
- Active injection drug use within the past year
- Having a pacemaker or implantable cardioverter-defibrillator if there was a placement, exchange, or manipulation within the past year
- Taking antibiotic prophylaxis prior to dental procedures
- In one of the four 2007 AHA-defined Higher Risk groups:
 - Prosthetic cardiac valve or prosthetic material used for cardiac valve repair,
 - Previous episode of IE,
 - Cardiac transplantation recipient with cardiac valvulopathy
 - Congenital heart disease, specifically the following:
 - unrepaired cyanotic congenital heart disease, including palliative shunts and conduits,
 - within 6 months of a completely repaired congenital heart defect with prosthetic material or device, whether placed by surgery or by catheter intervention, during the first 6 months after the procedure
 - repaired congenital heart disease with residual defects at the site or adjacent to the site of a prosthetic patch or prosthetic device.

Appendix Table 2 – Oral Hygiene and Periodontal Disease Measurements

Oral hygiene and periodontal disease measures were recorded on the 6 “Ramfjord” index teeth.¹ Calculus¹, Plaque², and Gingival² Indexes were recorded in 4 locations on each of the 6 index teeth: mesio-buccal, mid-buccal, disto-buccal, and mid-lingual. Periodontal pocket depth, clinical attachment loss, and bleeding on probing were measured at 3 tooth surface locations on each index tooth: mesio-buccal, buccal, disto-buccal. Pocket depth and clinical attachment level were recorded in the usual manner.³

The clinical measures were obtained in increasing order of invasiveness to avoid premature gingival bleeding (*i.e.* plaque index, gingivitis index, calculus index, probing depth, cemento-enamel junction – free gingival margin (CEJ – FGM) measurement, bleeding on probing). Calculus was assessed using a calculus-detection probe (11/12 Old Dominion University Explorer, Hu-Friedy). The gingival index, pocket depth and clinical attachment level measures were obtained using a Michigan 0-Probe with Williams markings. The plaque index was scored using a #1/2 Gracey curette.

The average value was calculated for each tooth and mean tooth scores for each subject were used as the participant score for each measure. Bleeding on probing was expressed as the percentage of measured sites that bled on probing in each subject.

1. Ramfjord SP. The Periodontal Disease Index (PDI). *J. Periodontol* 1967;38(6(Suppl)):602-10.
2. Loe H. The Gingival Index, the Plaque Index and the Retention Index Systems. *J Periodontol.* 1967 Nov-Dec;38(6):Suppl:610-6.
3. Pihlstrom BL. Measurement of attachment level in clinical trials: probing methods. *J Periodontol.* 1992 Dec;63(12 Suppl):1072-7.

Appendix Table 3. Participants Having No Dental Visits Within 12 Weeks Prior to Enrollment

Factor	Case (N=49)	Control (N=69)	p-value
Mean calculus score	0.91±0.65	0.59±0.54	0.004^a
Sum calculus score	21.3±15.0	13.7±12.5	0.003^a
Mean plaque index	0.96±0.68	0.72±0.55	0.034^a
Sum plaque index	22.5±16.0	16.9±12.9	0.037^a
Mean gingival index	0.70±0.64	0.55±0.49	0.15 ^a
Sum gingival index	16.4±15.0	13.0±11.6	0.17 ^a
Mean probing index	2.2±0.60	2.3±0.60	0.40 ^a
Sum probing index	38.2±11.1	40.4±10.8	0.30 ^a
Mean free gingival index	0.17±1.00	0.17±1.02	0.99 ^a
Sum free gingival index	3.2±17.4	3.5±17.4	0.92 ^a
Mean clinical attachment loss	2.0±1.06	2.1±1.2	0.66 ^a
Sum clinical attachment loss	35.1±18.4	36.9±19.9	0.62 ^a
Total bleeding sites	2.6±3.9	2.3±3.1	0.75 ^a
Mean percent of bleeding sites	14.2±21.5	13.0±17.0	0.75 ^a

Values presented as Mean ± SD, Median [P25, P75], Median (min, max) or N (column %).

p-values based on ANOVA.

Appendix Table 4. Participants Having Invasive Dental Procedures Within 12 Weeks Prior to Enrollment

Procedure	Case (N=62)	Control (N=119)	p-value
Dental hygiene cleaning	9(14.5)	43(36.1)	0.002
Periodontal (gum) treatment	0(0.0)	1(0.84)	0.99
Deep scaling	0(0)	0(0)	
Root canal	2(3.2)	1(0.84)	0.27
Denture or partial denture procedure	0(0)	0(0)	
Tooth extraction or other oral surgery	1(1.6)	3(2.5)	0.99
Radiographs	1(1.6)	2(1.7)	0.99
Exam	2(3.2)	11(9.2)	0.22
Endodontic implant	1(1.6)	1(0.84)	0.99
Restoration(s) (fillings)	1(1.6)	2(1.7)	0.99
Crowns or bridges	1(1.6)	8(6.7)	0.17

p-values based on t-test or Fisher's Exact test.

Values presented as N (column %).

Appendix Table 5. Participants Having Non-Dental Invasive Procedures within 12 Weeks Prior to Enrollment

Procedure	Case (N=62)	Control (N=119)	p-value
GASTROINTESTINAL PROCEDURES			
Upper gastrointestinal endoscopy (Endoscopy)	8(12.9)	1(0.84)	<0.001
Colonoscopy	5(8.1)	0(0.0)	0.004
GYNECOLOGIC PROCEDURES			
Childbirth	0(0.0)	1(2.0)	0.99
Other Obstetric and gynecologic	0(0.0)	2(4.1)	0.55
DERMATOLOGIC PROCEDURES			
Biopsy-punch or shave (any location)	1(5.0)	2(4.1)	0.99
Skin/mucosa piercing or tattooing	0(0.0)	1(0.84)	0.99
Cyst Excision	0(0.0)	1(0.84)	0.99
Cryosurgery	1(1.6)	0(0.0)	0.34
Other Dermatologic	0(0.0)	3(2.5)	0.55
GENITOURINARY PROCEDURES			
Cytoscopy	3(4.8)	1(0.84)	0.12
Urethral Dilation/Ureteral Surgery	2(3.2)	0(0.0)	0.12
Lithotripsy	1(1.6)	0(0.0)	0.34
Other Genitourinary	1(1.6)	0(0.0)	0.34

Appendix Table 5. Participants Having Non-Dental Invasive Procedures within 12 Weeks Prior to Enrollment

Procedure	Case (N=62)	Control (N=119)	p-value
OTOLARYNGOLOGY PROCEDURES			
Other Otolaryngology	0(0.0)	1(0.84)	0.99
OTHER PROCEDURES			
Biopsy-transbronchial	1(1.6)	0(0.0)	0.34
Bronchoscopy	1(1.6)	0(0.0)	0.34
Other Respiratory	1(1.6)	0(0.0)	0.34
Cardiac non-valve replacement surgery	1(1.6)	0(0.0)	0.34

Values presented as Mean ± SD, Median [P25, P75], Median (min, max) or N (column %).

p-values based on Fisher's Exact test.

Appendix Table 6. Participant Echocardiographic Findings

Factor	Case (N=62)	Control (N=119)	p-value
Transthoracic echocardiogram (TTE) performed	46(74.2)	110(92.4)	<0.001
Transesophageal echocardiogram (TEE) performed	47(75.8)	11(9.2)	<0.001
Mitral Valve Prolapse	8(12.9)	19(16.0)	0.58
With Regurgitation*	7(87.5)	15(78.9)	0.21
With Thickened Leaflets*	4(50.0)	13(68.4)	0.41
Mitral Regurgitation - Present?	39(62.9)	59(49.6)	0.088
Mitral Regurgitation - Severity*			0.31
. Mild	14(35.9)	29(49.2)	
. Moderate	14(35.9)	20(33.9)	
. Severe	11(28.2)	10(16.9)	
Mitral Regurgitation - If a Case, was the finding new?	13(21.0)	-	-
Mitral Stenosis - Present?	4(6.5)	10(8.4)	0.77
Mitral Stenosis - Severity*			0.066
. Mild	2(50.0)	10(100.0)	
. Moderate	1(25.0)	0(0.0)	
. Severe	1(25.0)	0(0.0)	
Mitral Stenosis - If a Case, was the finding new?	1(1.6)		-
Aortic Stenosis - Present?	10(16.1)	38(31.9)	0.022

Aortic Stenosis - Severity*			0.43
. Mild	2(20.0)	8(21.1)	
. Moderate	2(20.0)	15(39.5)	
. Severe	6(60.0)	15(39.5)	
Aortic Stenosis - If a Case, was finding new?	3(4.8)		-
Aortic Regurgitation - Present?	34(54.8)	44(37.0)	0.021
Aortic Regurgitation - Severity*			<0.001
. Mild	6(17.6)	20(45.5)	
. Moderate	7(20.6)	20(45.5)	
. Severe	21(61.8)	4(9.1)	
Aortic Regurgitation - If a Case, was the finding new?	18(29.0)	-	-
Tricuspid Stenosis - Present	0(0.0)	6(5.0)	0.096
Tricuspid Stenosis - Severity*			-
. Mild	-	5(83.3)	
. Moderate		1(16.7)	
Tricuspid Regurgitation - Present?	22(35.5)	51(42.9)	0.34
Tricuspid Regurgitation - Severity*			0.80
. Mild	17(77.3)	38(74.5)	
. Moderate	5(22.7)	13(25.5)	
Tricuspid Regurgitation - If a Case, was the finding new?	10(16.1)	-	-

Pulmonic Regurgitation - If a Case, was the finding new?	1(1.6)		-
Hypertrophic Cardiomyopathy (HCM)	4(6.5)	21(17.6)	0.038
Cases only: Was there evidence of intracardiac vegetations in the following locations?			
Mitral*	34(54.8)		-
Aortic*	32(51.6)	-	-
Tricuspid*	3(4.8)		-
Chordae*	4(6.5)		-
Catheter*			-
Myocardial Wall*	2(3.2)		-
Intracardiac Device Pacemaker/ICD*	1(1.6)		-
Perforation*	16(25.8)		-
Abscess*	9(14.5)		-
Fistula*	2(3.2)		-

*Data not available for all subjects.

Values presented as Mean \pm SD, Median [P25, P75], Median (min, max) or N (column %).

p-values based on: Pearson's chi-square test or Fisher's Exact test.

All 25 patients without a TTE went directly to TEE

Appendix Table 7. Participants Having Only Common Oral Bacteria Identified From Blood Cultures

Factor	Case (N=27)	Control (N=119)	p-value
Mean calculus score	0.95±0.72	0.55±0.52	<0.001 ^a
Sum calculus score	22.3±16.6	12.9±12.0	<0.001 ^a
Mean plaque index	0.89±0.66	0.70±0.54	0.11 ^a
Sum plaque index	20.9±15.3	16.6±12.8	0.13 ^a
Mean gingival index	0.75±0.71	0.53±0.50	0.067 ^a
Sum gingival index	17.4±16.5	12.6±11.9	0.081 ^a
Mean prob index	2.2±0.58	2.1±0.60	0.51 ^a
Sum prob index	39.6±10.9	38.1±11.0	0.52 ^a
Mean free gingival	0.49±0.86	0.18±0.99	0.14 ^a
Sum free gingival	8.9±15.5	3.5±17.3	0.15 ^a
Mean clinical attachment loss	1.7±0.91	2.0±1.1	0.35 ^a
Sum clinical attachment loss	30.7±16.5	34.5±19.6	0.35 ^a
Total bleeding sites	2.3±4.0	2.3±3.2	0.94 ^a
Mean pct of bleeding	13.0±22.1	12.7±17.8	0.94 ^a

Values presented as Mean ± SD, Median [P25, P75], Median (min, max) or N (column %).

p-values based on ANOVA