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Tracy I. George, MD, Chief Medical Officer

Patient Report

Patient Age/Gender: 85 years Male

Specimen Collected: 18-Dec-20 12:19

Humoral Immunity Panel I **|Received: 18-Dec-20 12:20** **Report/Verified: 18-Dec-20 12:31**

	Result	Units	Reference Interval
Diphtheria Antibody, IgG	0.1 i1	IU/mL	
Tetanus Antibody,IgG	0.1 i2	IU/mL	
Pneumo serotype 1 IgG (P13,PNX)	0.55	ug/mL	
Pneumo serotype 3 IgG (P13,PNX)	0.38	ug/mL	
Pneumo serotype 4 IgG (P7,P13,PNX)	0.11	ug/mL	
Pneumo serotype 5 IgG (P13,PNX)	0.49	ug/mL	
Pneumo serotype 6B IgG (P7,P13,PNX)	0.05	ug/mL	
Pneumo serotype 7F IgG (P13,PNX)	0.20	ug/mL	
Pneumo serotype 8 IgG (PNX)	0.07	ug/mL	
Pneumo serotype 9N IgG (PNX)	0.09	ug/mL	
Pneumo serotype 9V IgG (P7,P13,PNX)	0.06	ug/mL	
Pneumo serotype 12F IgG (PNX)	0.04	ug/mL	
Pneumo serotype 14 IgG (P7,P13,PNX)	0.58	ug/mL	
Pneumo serotype 18C IgG (P7,P13,PNX)	0.39	ug/mL	
Pneumo serotype 19F IgG (P7,P13,PNX)	0.21	ug/mL	
Pneumo serotype 23F IgG (P7,P13,PNX)	0.07	ug/mL	
Pneumo Serotype Interpretation	See Note f1 i3		
Immunoglobulin G	**250** L i4	mg/dL	768-1632
Immunoglobulin A	**8** L i5	mg/dL	68-408
Immunoglobulin M	**<10** L i6	mg/dL	35-263
Immunoglobulin G Subclass 1	**25** L i7	mg/dL	240-1118
Immunoglobulin G Subclass 2	**10** L i8	mg/dL	124-549
Immunoglobulin G Subclass 3	**2** L i9	mg/dL	21-134

*=Abnormal, #=Corrected, C=Critical, f=Result Footnote, H=High, i=Test Information, L=Low, t=Interpretive Text, @=Performing Lab

Patient Age/Gender: 85 years Male

Humoral Immunity Panel I |**Received: 18-Dec-20 12:20** **Report/Verified: 18-Dec-20 12:31**

	Result	Units	Reference Interval
Immunoglobulin G Subclass 4	126 H i10	mg/dL	1-123

Result Footnote

f1: Pneumo Serotype Interpretation
Streptococcus pneumoniae Antibodies, IgG
A pre- and post-vaccination comparison is required to adequately assess the humoral immune response to Prevnar 7 (P7), Prevnar 13 (P13), and/or Pneumovax 23 (PNX) Streptococcus pneumoniae vaccines. Pre-vaccination samples should be collected prior to vaccine administration. Post-vaccination samples should be obtained at least 4 weeks after immunization. Testing of post-vaccination samples alone will provide only general immune status of the individual to various pneumococcal serotypes.
In the case of pure polysaccharide vaccine, indication of immune system competence is further delineated as an adequate response to at least 50 percent of the serotypes in the vaccine challenge for those 2-5 years of age and to at least 70 percent of the serotypes in the vaccine challenge for those 6-65 years of age.
Individual immune response may vary based on age, past exposure, immunocompetence, and pneumococcal serotype.
Responder Status Antibody Ratio
Non-Responder . . . . . Less than 2-fold
Weak Responder . . . . . 2-fold to 4-fold
Good Responder . . . . . Greater than 4-fold
A response to 50-70 percent or more of the serotypes in the vaccine challenge is considered a normal humoral response(1).
Antibody concentration greater than 1.0 - 1.3 ug/mL is generally considered long-term protection(2).
References:
1. Daly TM, Pickering JW, Zhang X, Prince HE, Hill HR. Multilaboratory assessment of threshold versus fold-change algorithms for minimizing analytical variability in multiplexed pneumococcal IgG measurements. Clin Vaccine Immunol. 2014;21(7):982-8.
2. Daly TM, Hill HR. Use and Clinical Interpretation of Pneumococcal Antibody Measurements in the Evaluation of Humoral Immune Function. Clin Vaccine Immunol. 2015;22(2):148-152.
Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement B: aruplab.com/CS

Test Information

i1: Diphtheria Antibody, IgG
INTERPRETIVE INFORMATION: Diphtheria Ab, IgG

Antibody concentration of greater than 0.1 IU/mL is usually considered protective.

Responder status is determined according to the ratio of a one month post-vaccination sample to pre-vaccination concentrations of Diphtheria IgG Abs as follows:

Test Information

i1: Diphtheria Antibody, IgG

1. If the one month post-vaccination concentration is less than 1.0 IU/mL, the patient is considered to be a non-responder.

2. If the post-vaccination concentration is greater than or equal to 1.0 IU/mL, a patient with a ratio of less than 1.5 is a non-responder, a ratio of 1.5 to less than 3.0, a weak responder, and a ratio of 3.0 or greater, a good responder.

3. If the pre-vaccination concentration is greater than 1.0 IU/mL, it may be difficult to assess the response based on a ratio alone. A post-vaccination concentration above 2.5 IU/mL in this case is usually adequate.

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement B: aruplab.com/CS

i2: Tetanus Antibody, IgG

INTERPRETIVE INFORMATION: Tetanus Ab, IgG

Antibody concentration of greater than 0.1 IU/mL is usually considered protective.

Responder status is determined according to the ratio of a one-month post-vaccination sample to pre-vaccination concentration of Tetanus IgG Abs as follows:

1. If the one month post-vaccination concentration is less than 1.0 IU/mL, the patient is considered a non-responder.

2. If the post-vaccination concentration is greater than or equal to 1.0 IU/mL, a patient with a ratio of less than 1.5 is a non-responder, a ratio of 1.5 to less than 3.0, a weak responder, and a ratio of 3.0 or greater, a good responder.

3. If the pre-vaccination concentration is greater than 1.0 IU/mL, it may be difficult to assess the response based on a ratio alone. A post-vaccination concentration above 2.5 IU/mL in this case is usually adequate.

Test Information

i2: Tetanus Antibody, IgG

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement B: aruplab.com/CS

i3: Pneumo Serotype Interpretation

INTERPRETIVE INFORMATION: Streptococcus pneumoniae Antibodies, IgG

A pre- and post-vaccination comparison is required to adequately assess the humoral immune response to Prevnar 7 (P7), Prevnar 13 (P13), and/or Pneumovax 23 (PNX) Streptococcus pneumoniae vaccines. Pre-vaccination samples should be collected prior to vaccine administration. Post-vaccination samples should be obtained at least 4 weeks after immunization. Testing of post-vaccination samples alone will provide only general immune status of the individual to various pneumococcal serotypes.

In the case of pure polysaccharide vaccine, indication of immune system competence is further delineated as an adequate response to at least 50 percent of the serotypes in the vaccine challenge for those 2-5 years of age and to at least 70 percent of the serotypes in the vaccine challenge for those 6-65 years of age. Individual immune response may vary based on age, past exposure, immunocompetence, and pneumococcal serotype.

Responder Status	Antibody Ratio
Non-Responder	Less than 2-fold
Weak Responder	2-fold to 4-fold
Good Responder	Greater than 4-fold

A response to 50-70 percent or more of the serotypes in the vaccine challenge is considered a normal humoral response(1). Antibody concentration greater than 1.0 - 1.3 ug/mL is generally considered long-term protection(2).

References:

1. Daly TM, Pickering JW, Zhang X, Prince HE, Hill HR. Multilaboratory assessment of threshold versus fold-change algorithms for minimizing analytical variability in multiplexed pneumococcal IgG measurements. Clin Vaccine Immunol. 2014;21(7):982-8.

2. Daly TM, Hill HR. Use and Clinical Interpretation of Pneumococcal Antibody Measurements in the Evaluation of Humoral Immune Function. Clin Vaccine Immunol. 2015;22(2):148-152.

Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement B: aruplab.com/CS

i4: Immunoglobulin G

REFERENCE INTERVAL: Immunoglobulin G

Test Information

i4: Immunoglobulin G

Access complete set of age- and/or gender-specific reference intervals for this test in the ARUP Laboratory Test Directory (aruplab.com).

i5: Immunoglobulin A

REFERENCE INTERVAL: Immunoglobulin A

Access complete set of age- and/or gender-specific reference intervals for this test in the ARUP Laboratory Test Directory (aruplab.com).

i6: Immunoglobulin M

REFERENCE INTERVAL: Immunoglobulin M

Access complete set of age- and/or gender-specific reference intervals for this test in the ARUP Laboratory Test Directory (aruplab.com).

i7: Immunoglobulin G Subclass 1

REFERENCE INTERVAL: Immunoglobulin G Subclass 1

The total IgG (mg/dL) can be derived from the sum of the subclass IgG1, IgG2, IgG3, and IgG4 values. However, a confirmatory and more precise total IgG is available by the turbidimetric method of quantitation for total IgG. Refer to test Immunoglobulin G, Serum (0050350).

Access complete set of age- and/or gender-specific reference intervals for this test in the ARUP Laboratory Test Directory (aruplab.com).

i8: Immunoglobulin G Subclass 2

REFERENCE INTERVAL: Immunoglobulin G Subclass 2

Access complete set of age- and/or gender-specific reference intervals for this test in the ARUP Laboratory Test Directory (aruplab.com).

i9: Immunoglobulin G Subclass 3

REFERENCE INTERVAL: Immunoglobulin G Subclass 3

Access complete set of age- and/or gender-specific reference intervals for this test in the ARUP Laboratory Test Directory (aruplab.com).

i10: Immunoglobulin G Subclass 4

REFERENCE INTERVAL: Immunoglobulin G Subclass 4

Access complete set of age- and/or gender-specific reference intervals for this test in the ARUP Laboratory Test Directory (aruplab.com).