PATIENT REPORT

500 Chipeta Way, Salt Lake City, Utah 84108-1221

phone: 801-583-2787, toll free: 800-522-2787

Jonathan R. Genzen, MD, PhD, Chief Medical Officer

Patient Age/Sex:

Unknown

Specimen Collected: 05-Jun-23 12:50			
Humoral Immunity Panel I	eceived: 0	5-Jun-23 12:53	Report/Verified: 05-Jun-23 13:04
Procedure	Result	Units	Reference Interval
Diphtheria Antibody,IgG	9.5 ⁱ¹	IU/mL	
Tetanus Antibody, IgG	8.5 ⁱ²	IU/mL	
Pn serotype 1 IgG (P13,P20,PNX,	32.25	ug/mL	
V15)			
Pn serotype 3 IgG (P13,P20,PNX,	32.56	ug/mL	
V15)			
Pn serotype 4 IgG (P7,P13,P20, PNX,V15)	13.52	ug/mL	
Pn serotype 5 IgG (P13,P20,PNX,	48.96	ug/mL	
V15)			
Pn serotype 6B IgG (P7,P13,P20,	0.12	ug/mL	
PNX, V15)		, -	
Pn serotype 7F IgG (P13,P20,PNX,	0.50	ug/mL	
V15)	22 10	/T	
Programme ON Lag (PNY)	23.19 24.19	ug/mL	
Pn serotype 9N IgG (PNX) Pn serotype 9V IgG (P7,P13,P20,		ug/mL ug/mL	
PNX, V15)	10.10	ug/ iiiii	
Pn serotype 12F IgG (P20,PNX)	23.15	ug/mL	
Pn serotype 14 IgG (P7,P13,P20,	18.83	ug/mL	
PNX, V15)			
Pn serotype 18C IgG (P7,P13,P20,	15.58	ug/mL	
PNX, V15)			
Pn serotype 19F IgG (P7,P13,P20,	13.54	ug/mL	
PNX,V15)			
Pn serotype 23F IgG (P7,P13,P20,	15.16	ug/mL	
PNX,V15)		± 2	
Pn Serotype Interpretation	See Note		
Immunoglobulin G	65 ¹⁴	mg/dL	
Immunoglobulin A Immunoglobulin M	150 ¹⁵	mg/dL	
_	156 ¹⁶	mg/dL	
Immunoglobulin G Subclass 1	<15 ⁱ⁷	mg/dL	
Immunoglobulin G Subclass 2 Immunoglobulin G Subclass 3	2 ⁱ⁸ 3 ⁱ⁹	mg/dL	
_	3 ¹⁹ 2 ¹¹⁰	mg/dL	
Immunoglobulin G Subclass 4	۷ ۱۱۰	mg/dL	

Test Information

Diphtheria Antibody, IgG i1:

INTERPRETIVE INFORMATION: Diphtheria Ab, IgG

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

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

Unless otherwise indicated, testing performed at:

ARUP Laboratories

500 Chipeta Way, Salt Lake City, UT 84108

Laboratory Director: Jonathan R. Genzen, MD, PhD

ARUP Accession:

23-156-900074

Report Request ID: 17763659

Printed:

19-Jun-23 11:19

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Unknown

Test Information

il: Diphtheria Antibody, IgG

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:

- 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.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

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

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Unknown

Test Information

i2: Tetanus Antibody, IgG

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.

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i3: Pn Serotype Interpretation

INTERPRETIVE INFORMATION: Streptococcus pneumoniae Antibodies, IgG

A pre- and postvaccination comparison is required to adequately assess the humoral immune response to the pure polysaccharide Pneumovax 23 (PNX) and/or the protein conjugated Prevnar 7 (P7), Prevnar 13 (P13), Prevnar 20 (P20), and Vaxneuvance (V15) Streptococcus pneumoniae vaccines. Prevaccination samples should be collected prior to vaccine administration. Postvaccination samples should be obtained at least 4 weeks after immunization. Testing of postvaccination 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

Nonresponder Less than twofold increase and postvaccination concentration less than 1.3 $\mu g/mL$

Good responder At least a twofold increase and/or a postvaccination concentration greater than or equal to 1.3 $\mu g/mL$

A response to 50-70 percent or more of the serotypes in the vaccine challenge is considered a normal humoral response. (Daly, 2014) Antibody concentration greater than $1.0-1.3~\mu\text{g/mL}$ is generally considered long-term protection. (Daly, 2015)

References:

Laboratory Director: Jonathan R. Genzen, MD, PhD

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Test Information

- i3: Pn Serotype Interpretation
 - 1. Daly TM, Pickering JW, Zhang X, et al. Multilaboratory assessment of threshold versus fold-change algorithms for minimizing analytical variability in multiplexed pneumococcal IgG measurements. Clin Vaccine Immunol. 2014;21(7):982-988.
 - 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.

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i4: Immunoglobulin G

REFERENCE INTERVAL: 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

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Test Information

Immunoglobulin G Subclass 3 i9:

> 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

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