Antibody Deficiency: What Does It Mean?

September 15, 2022
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MISSION

Improving the diagnosis, treatment, and quality of life of people affected by primary immunodeficiency through fostering a community empowered by advocacy, education, and research.
VISION

IDF seeks to ensure that everyone in the U.S. affected by PI has a fully informed understanding of

1. the PI diagnosis that affects them,
2. all available treatment options,
3. the expected standard of care,
4. all their opportunities for connection and support within the PI community.
Questions?

https://community.primaryimmune.org/s/newask
800-296-4433
Get Connected Groups

https://primaryimmune.org/support-services

Virtual groups exclusively for individuals & families living with PI
IDF Forums

Coming soon to your home!

- September 20: Young Adult Hangout: Ages 18-25
- September 28: Lunch & Learn: Hemophagocytic Lymphohistiocytosis (HLH)
- October 20: Paying for Immunoglobulin (Ig) Replacement Therapy
IDF Education Meetings

October 22
Minneapolis (Bloomington), MN

December 3
Baltimore (Hanover), MD
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(global rare diseases)
Antibody Deficiency…what does it mean?

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Antibody Deficiency:

- Antibodies are part of the Immune System
Antibody Deficiency:

Five kinds/classes of antibodies:

- **IgG** – Most Significant for Defenses
- IgA – Important in mucosas (respiratory, digestive, genital)
- IgM – First responders
- IgE – Allergies and Parasites (worms)
- IgD – accessory

- There are 4 IgG subclasses
Antibody Deficiency:

Blood 2016 127:681-695
Antibody Deficiency Means:

- Low Antibody Levels
  (Quantity)
- And/or
- No Antibody Response
  (Quality)
IgG levels

- Infant: IgG
- Maternal IgG
- Total IgG

Serum Concentrations, mg/ml

800-1200 mg/dL

Adult level

Age

0 4 mo 8 mo 12 mo 5 yrs 10 yrs
Antibody Deficiency:

Low Production -

Excessive losses – More common

B cells
Plasma cells
Antibody Deficiency:

Excessive Losses:
- Loose Stools, diarrhea
- Kidney Problems- Proteinuria
- Other

- Mild decrease of Antibody levels
- Transient with disease activity
Antibody deficiency

1. Low antibody levels
2. Normal levels, however no response to infections

Immunobiology, Janeway
Antibody deficiency

Why there might not be a good response?

- Many steps to produce a response
Antibody deficiency

- Many steps to produce a response

Nature Reviews Immunology 9, 185-194 (March 2009)
Antibody Deficiency Means:

Low Antibody Levels

And/or

No Antibody Response
Antibody Deficiency Means:

- Higher frequency of infections than expected
- More severe infections than normal
- Prolonged time to recovery
- Other immune problems- inflammation
Antibody deficiency
- Common infections

Images from NHLBI, MedicineNet
Antibody Deficiencies:
- Primary or congenital

Common Variable Immunodeficiency (CVID)

Transient Hypogammaglobulinemia of Infancy (THI)

X-linked agammaglobulinemia

Selective IgA deficiency

Selective IgG2 deficiency

* T cell immunodeficiencies

- SECONDARY CAUSES
Antibody Deficiency

MANAGEMENT

1. Prevent Infections
2. IgG replacement
3. Be aware of non-infectious complications
Antibody Deficiency

MANAGEMENT

1. Prevent Infections- reduce risk

Hand washing
Avoid crowds
Boiled/bottled water
Antibody Deficiency

MANAGEMENT

1. Prevent Infections

2. IgG replacement

intravenous

subcutaneous
Antibody Deficiency

MANAGEMENT

1. Prevent Infections
2. IgG replacement

3. Be aware of non-infectious complications

Keep in touch with the clinical immunologist!

CHRONIC LUNG DISEASE
GRANULOMAS
INFLAMMATORY DISORDERS- JOINT PAIN
AUTOIMMUNE CYTOPENIA- ANEMIA
Antibody deficiency means:

- Low IgG levels or sub optimal antibody responses
- An increase in number or severity of infections
- Need of measures to reduce risk of infections
- Long life expectancy with IgG supplementation
THANK YOU!

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From all of us at IDF

Thank You!

You make the IDF community stronger