Igg deficiency

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IgG deficiency May 28, IgG deficiency Diseases and infection change body systems and alter quality of life. One of the roles ofnursing is to ensure quality of health through prevention, treatment, or management of diseases and infection. Pathophysiology of IgG, causes of the deficiency, and current treatment are discussed, with a 24 year old who has a recurrent sinusitis and has been diagnosed with the deficiency as the target audience.

Pathophysiology of IgG

IgG subclass deficiency alters the body's defense mechanism through their actions against protein antigens and polysaccharide. There are four classes of IgG and they define classes of antibodies that act on the targets. IgG1 and IgG3 subclasses have antibodies that act on protein antigens and therefore inhibit roles of the antigens. Antibodies of IgG2 and IgG4, however, acts on antigens of " carbohydrates and polysaccharide" to impair functions of the antigens (Porth, 2011, p. 361). Defficiency of IgG2 leads to " sinusitis, otitis media, and pneumonia" that arise from bacteria that are embedded in polysaccharides. Examples of such bacteria are " S. pneumonia, H. influenza type b, and N. meningitidis" (p. 361). McMillan, Feigin, DeAngelis, & Jones (2006), however, argue that IgG4, unlike the other subclasses, do not have a binding effect that leads to cytotoxicity.

Cause and treatment of IgG

No cause of IgG has been identified but genetics is suspected o play a significant role. Parents transfer genes to their children and the genes are responsible for protein development in the body of the offspring. Transferred defective gene is likely to imply defective development of elements of cells that relate to that gene and this suggest high susceptibility of IgG deficiency

for people whose parents have the complication (Johns Hopkins University, n. d.). There is no treatment for IgG deficiency but management approaches exist. the approaches target specific infection that arise from the deficiency and not the deficiency. Some of the management approaches, according to The Centers for Disease Control and Prevention (2015), are vaccine against pneumonia and other live vaccines. “ OPV2, BCG, yellow fever,” vaccines are however contraindicated. The recommended vaccines reduce susceptibility to the infections and therefore undermine pathophyliology of IgG deficiency (n. p.). While these aim at preventing occurrence of associated complication, treatment of the complication is an alternative measure to managing IgG deficiency. Infections such as allergies may reoccur and require constant antibiotic medication. In extreme cases, however, direct approach to managing the deficiency may b necessary. Immunoglobulin therapy, which involves replacement of a person’s immunoglobulin is done. The infused immunoglobulin has the necessary subclasses and therefore ensures effective immunity (Johns Hopkins University, n. d.). Empirical studies support he immunoglobulin approach for people with IgG3 deficiency (Abrahamian, Agrawal, & Gupta, 2010) and this, based on additional research, could be inferred to effectiveness other sub class deficiencies. Immunoglobulin G subclasses acts on antibodies to protect the body from diseases that arise from microorganisms that are embedded on protein, carbohydrates, and polysaccharides. Efficiency of the IgG subclasses therefore means inability to counteract the microorganisms and increases susceptibility to specific types of infections. Hereditary transfer is a suspected cause of the complication treatment does not exist but can be

managed through prevention and treatment of associated infections and through immunoglobulin transfer.

References

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