NATIONAL BLOOD AUTHORITY
AUSTRALIA

Adjusting Immunoglobulin dose for ideal body weight

The amount of Immunoglobulin (Ig) prescribed for a patient may vary depending on the indication as well as the patient's weight and is set out in the Criteria for the clinical use of Immunoglobulin in Australia (the Criteria). When prescribing Ig, clinicians should aim to use the lowest dose possible that achieves the appropriate clinical outcome for each patient. As well as conserving the use of this precious product, this approach is thought to potentially reduce side effects, some of which may be dose related.

Clinicians prescribing Ig may adjust the dose for Ideal Body Weight (IBW) at their discretion, or to comply with state/territory policy. This approach is most often applied when the patient is significantly overweight or obese because of the pharmacokinetic properties of Ig. Research has shown that Ig is distributed into body fluids and very little is distributed into body fat. The Ig dose calculated for obese patients should account for an increased distribution due to extra body fluid without accounting for an increase in body fat[1]. Whilst there is some evidence supporting the adjustment of Ig dose using ideal body weight calculations in obese patients, further research in this area is still needed.

A calculator is available in BloodSTAR to assist clinicians when adjusting Ig dose for ideal body weight. The BloodSTAR Calculator applies two calculations[2] to generate a weight for dosing purposes.

Calculation 1 – Ideal Body Weight (IBW) (kg) (also known as the Devine formula):

IBW for males = 50 + [2.3 x (height in inches* – 60)]

IBW for females = 45.5 + [2.3 x (height in inches* – 60)]

* The patient height entered will be converted from centimetres to inches to fit the formula.1 centimetre is equivalent to 0.393701 inches.

Calculation 2 – Dose Determining Weight (DDW) (kg):

DDW = IBW + 0.4 x (actual body weight in kg – IBW)

The NBA does not recommend applying the calculator to patients:

- aged less than 18 years;
- less than 152cm in height; or
- that are pregnant.

Furthermore, if the calculator is applied but the actual weight of the patient is less than the dose determined weight (DDW) (as calculated in BloodSTAR), the Ig dose should be calculated using the patient's **actual** weight.

1. Siegel, J. (2010, January). IVIG FAQ: Immunoglobulins and Obesity. Pharmacy Practice News, pp. 8-9.
2. Pai, M.P. & Paloucek, F.P. (2000). The origin of the "ideal" body weight equations. Annals of Pharmacotherapy, 34(9), 1066-9.