Chapter 23
The Obese Patient

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Abstract Obese patients have a different body composition compared to a normal weight individual. With increasing obesity, fat mass will increase at a greater rate than lean body weight. As a result, an obese patient will have greater fat mass but only slightly more muscle mass than a normal weight individual of the same height and sex. Due to these differences, drug kinetics and dynamics are altered in the obese. Drug administration practices need to be altered to accommodate recommended doses based on studies done in normal weight subjects. These adjustments are done using different weight descriptors such as total body weight (TBW), lean body mass (LBM) or ideal body weight (IBW). Choice of weight descriptor to guide dosing depends on the lipophilic or hydrophilic property of the drugs. Generally, hydrophilic drugs will primarily redistribute to the muscle compartment, thus the loading dose of these drugs should be based on LBM. Likewise, lipophilic drugs will eventually redistribute to the fat mass, thus loading dose of these drugs should be based on TBW. However, other factors such as protein binding, tissue binding and degree of ionization also greatly influence how drugs distribute in the different tissue compartments. As a result of this complex interaction, drug dosing should ultimately be based on the available evidence for that particular drug. Factors such as metabolism, clearance and pharmacodynamic interferences must be taken into consideration for any individual. The titration of the drug aided by drug level monitoring or monitoring of response to the drug may be good practice. This is especially so when using drugs with a narrow therapeutic window, and in obese patients with possible life threatening complications of obesity such as obstructive sleep apnea.

Keywords Obesity • Body composition • Weight descriptors • Total body weight • Lean body mass • Ideal body weight • Lipophilic drugs • Hydrophilic drugs • Drug titration • Narrow therapeutic window

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In drug pharmacokinetics may be possible especially if they are low. Drugs used in patients and drugs for drugs cross the placenta. The risk/benefit ratio, especially during the period of ‘safe’ during pregnancy and breast milk use.

Learning Resources


References

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