down cGMP, and this enzyme can be inhibited and thereby the vasodilatory effect of NO is enhanced. All three PDE5 are only pharmacologically active when cGMP synthesis is activated, the action of the PDE5 inhibitors therefore requires sexual arousal (corbin JD *et al*., 2002).

They have a chemical structure that is similar to cGMP, vardenafil and sildenafil have a very similar chemical structure while tadalafil have a different chemical structure and this explains the differences in the selectivity for PDE isozymes and pharmacokinetics properties of tadalafil (Nichols DJ *et al*., 2002).

In essence, all the PDE5 inhibitors are well absorbed from the gastrointestinal tract, peak plasma concentration are reached in less than 1 hour for sildenafil and vardenafil and it needs around 2 hour for tadalafil (Patterson, *et al*., 2001). Fatty food delay the absorption of sildenafil and vardenafil but has no effect on the absorption of tadalafil, accordingly tadalafil can be taken with or without food, when taken with food, sildenafil absorption decrease by almost 30% and the mean time to the maximum concentration delayed by approximately 1 hour , also vardenafil absorption will decrease by up to 1 hour and the maximal concentration of vardenafil will decrease by approximately 20% (Rajagopalan P, *et al*., 2003). In fact alcohol has no effect on the pharmacokinetic profile for sildenafil, vardenafil and tadalafil, but alcohol remain one of the main reasons for erectile dysfunction (Bacon CG, *et al*., 2003). The three available PDE5 inhibitors (sildenafil, vardenafil and tadalafil ) are eliminated by hepatic metabolism .

PDE isozymes have been characterized based on amino acid sequence, substrate specificity, and inhibitor sensitivity. Hence, eleven were identified, in reality PDE5 inhibitors are highly selective for PDE5 but may have other effect on PDE isozymes