



A Note on Unwanted Pregnancy Metrics and Basic Pharmacology of Contraceptives

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DESCRIPTION

Unintended pregnancies are common and can occur for a variety of reasons. In 2012, there were 213 million pregnancies worldwide, with 85 million (almost 40%) of these being unplanned. Unintended pregnancies resulted in 50% of abortions, 38% of unplanned births, and 13% of miscarriages [1]. Abortion is illegal and dangerous in many African nations, accounting for 9% of all maternal fatalities. Emergency contraceptives serve a critical role in preventing unwanted births in this situation. Emergency Contraceptives (EC) are strategies for preventing unwanted pregnancy if taken within a certain time frame. If they are oral tablets, they are sometimes known as postcoital contraception or "morning-after" pills.

Hormonal emergency contraception has been demonstrated to be effective after unprotected intercourse for up to 72 hours [2]. The earlier treatment begins, however, the more effective it is. This does not apply to ulipristal, on the other hand. Ulipristal is at least as effective as levonorgestrel within 72 hours of unprotected sex and is anticipated to be 98.3% to 99.3% effective. Ulipristal's efficacy lasts up to 5 days (120 hours) after unprotected sexual contact, whereas levonorgestrel's efficacy decreases when administered more than 48 hours after unprotected sexual contact. Ulipristal is more effective than levonorgestrel after 72 to 120 hours.

Levonorgestrel has a 100% bioavailability since it does not undergo "first-pass" metabolism. When taken orally as a tablet, this makes it effective. Maximum plasma concentrations of 21.1 ng/mL were attained at a median of 1.7 hours (range 1-4 hours) after a single dosage of levonorgestrel was administered. There have been no studies that have looked at the impact of meals on the pace and extent of levonorgestrel absorption after a single oral dosage. According to studies, levonorgestrel's apparent volume of distribution (Vd) is around 2.1 L/kg. Levonorgestrel had an elimination half-life of 25.5±4.6 hours following a single dose (0.65 mg). The single and 12-hour dose of LNG is made easier by these pharmacokinetic factors.

Levonorgestrel is strongly protein bound (96.5-98.9%), mostly to Sex Hormone Binding Globulin (SHBG) and to a lesser extent, serum albumin. Any displacement of LNG to the bound protein could result in negative effects, which is why concurrent drugs must be monitored.

Levonorgestrel and its metabolites are eliminated in the urine in around 45% of cases, and in the faeces in about 32% of cases, largely as glucuronide conjugates.

Ulipristal is absorbed quickly after a single 30 mg dose is taken orally. Approximately 0.5–3 hours after oral intake, a peak plasma concentration of 186 90 ng/ ml occurs [3]. Ulipristal is a medication that can be taken with or without food. In comparison to the fasting state, studies showed that when given with a high fat meal, there was a 50–55% lowers mean Cmax (maximum or peak serum concentration), a delayed time to maximum concentration (tmax), and a 25-30% higher mean area under the drug concentration curve from time zero to infinity (AU). Ulipristal has a high affinity for plasma proteins, such as albumin, high-density lipoproteins, and alpha-1-acid glycoprotein (>97%). The CYP3A4 pathway is used to extensively metabolise it in the liver. Mono-demethylated and di-demethylated metabolites are the most common. Pharmacologically, the mono-demethylated metabolite is active. Ulipristal has a terminal half-life of 32.4 ± 6.3 hours in plasma [4].

CONCLUSION

The "morning-after" pill, a type of contraceptive pill, is helpful in avoiding unintended pregnancy. The term "morning after" is misleading; emergency contraception should be started sooner than the morning after, that is, just after unprotected sexual activity. After 72 hours, the efficacy of both levonorgestrel-containing and combined emergency contraceptive pills declines; hence, the sooner they are used, the higher the chances of avoiding an unintended pregnancy. Ulipristal, on the other hand, has no diminished effectiveness and can last up to 120 hours.

REFERENCES

1. Ranatunga IDJC, Jayaratne K. *BMC Pregnancy Childbirth*. **2020**;20:667
2. Robinson JA. *Infect Dis Obstet Gynecol*. **2012**;12:4-47.
3. Munuce MJ, Elias MDG, Caille AM, et al. *Reprod*. **2020**;159(3):139-149.
4. Danielsson GK. *Contraception*. **2010**;82(5):404-409.