BLOWING UP PHARMANCOLOGY

A SCIENTIST IN 1982 THINKING ABOUT STARTING HIS CLINICAL TRIAL FOR A NEW DRUG...

BOOM!

YOU MUST PAY ATTENTION TO PHARMACOKINETIC DIFFERENCES. I'LL EXPLAIN SOME OF THEM TO YOU

WAIT! I COME FROM THE FUTURE. YOU CAN'T FORGET THAT THE SAME DRUG CAN ACT DIFFERENTLY IN MEN AND WOMEN.

1025

GLUP

1.LIBERATION

WE MUST CONSIDER THAT WOMEN USUALLY HAVE A SLOWER GASTRIC EMPTYING, WHICH AFFECTS THE RELEASE SPEED, AND A HIGHER ACIDITY LEVEL, WHICH CAN MODIFY THE DRUG'S SOLUBILITY

THESE DIFFERENCES MAY CAUSE SOME DRUGS TO LAST LONGER IN WOMEN'S BODIES OR HAVE MORE INTENSE OR PROLONGED EFFECTS

2.ABSORPTION

IT MAY VARY DEPENDING ON THE PHASE OF THE MENSTRUAL CYCLE.

SOME DRUGS THAT ARE RAPIDLY METABOLIZED IN MEN MIGHT ACCUMULATE IN WOMEN AND CAUSE TOXIC EFFECTS IF DOSES ARE NOT PROPERLY ADJUSTED.

3.DISTRIBUTION

WOMEN HAVE A HIGHER PERCENTAGE OF ADIPOSE TISSUE COMPARED TO MEN.

THIS CAUSES LIPOPHILIC DRUGS TO BE STORED MORE IN FAT

WOMEN TEND TO HAVE LOWER ALBUMIN LEVELS, WHICH CAN INCREASE THE AMOUNT OF ACTIVE DRUG IN THE BLOOD.

4.METABOLISM

WOMEN HAVE HIGHER ACTIVITY IN CERTAIN CYP450 ENZYMES, SUCH AS CYP3A4 AND CYP2D6, WHICH CAN LEAD TO FASTER METABOLISM OF SOME DRUGS.

5.EXCRETION

WOMEN GENERALLY HAVE A SLIGHTLY LOWER GLOMERULAR FILTRATION RATE (GFR) THAN MEN DUE TO LOWER MUSCLE MASS AND THEREFORE LESS CREATININE IN THE BLOOD.

URINARY PH MAY BE SLIGHTLY MORE ACID, WHICH ALSO AFFECTS THE ELIMINATION OF SOME DRUGS

AS YOU HAVE SEEN, PHARMACOKINETIC DIFFERENCES BETWEEN MEN AND WOMEN AFFECT THE LADME PROCESSES, WHICH CAN IMPACT THEIR EFFICACY AND SAFETY. THIS IS WHY A CLINICAL TRIAL THAT REFLECTS THE ACTUAL POPULATION IS OF VITAL IMPORTANCE. THESE VARIATIONS REQUIRE DOSE ADJUSTMENTS AND ATTENTION TO POTENTIAL ADVERSE EFFECTS SINCE SOME DRUGS MAY REMAIN EFFECTIVE FOR LONGER IN WOMEN AND EVEN CAUSE TOXIC EFFECTS THAT DO NOT OCCUR IN MEN. A PERSONALIZED TREATMENT APPROACH OPTIMIZES CLINICAL OUTCOMES AND MINIMIZES RISKS.

5th year medical students
- Leonor Amador Pérez
- Marina Gamero Martínez

#worldsmartmedicationday

UNIVERSITAS MALACITANA

IUPHAR INTERNATIONAL UNION OF BASIC AND CLINICAL PHARMACOLOGY