[O-13] EVALUATION OF EXPOSURE TO ETHINYL ESTRADIOL (EE) WITH A LOW DOSE COMBINATION TRANSDERMAL CONTRACEPTIVE DELIVERY SYSTEM (AG200-15) COMPARED TO LOW-DOSE COMBINATION ORAL CONTRACEPTIVE.

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OBJECTIVE: To evaluate the EE pharmacokinetic (PK) profile of a transdermal contraceptive delivery system (TCDS) compared to an OC (oral contraceptive) in healthy female volunteers.
DESIGN: Open-label, comparative, crossover study: Cycle 1 is a run-in cycle with the TCDS administered to all subjects. Cycles 2 and 3, are a crossover design with subjects randomly assigned to sequences of a TCDS and an OC with each treatment given for one cycle. The TCDS was applied to the buttock weekly for three weeks followed by a patch-free week. The OC was administered for 21 days followed by a pill free week.
MATERIALS AND METHODS: PK evaluations were performed at the 1st and 3rd weeks for the TCDS cycles and Days 7 and 21 for the OC cycles. Plasma concentrations of EE were determined via LC/MS method. Maximum Plasma concentration levels (Cmax), Steady-state concentration calculated as average concentration at steady-state from the 24-hour trapezoidal area under the curve (Cavg), and steady state concentration levels (Css) were evaluated. Relative bioavailability was determined from an ANOVA model. Calculated test/reference ratios with 90% confidence intervals were calculated. The projected EE daily delivery for the TCDS was estimated with the OC 35 µg EE daily dose as a reference.
RESULTS: Thirty-two evaluable subjects with mean age of 37 years and mean BMI of 26 kg/m^2 were included in the analyses. Cmax was approximately 60% lower for the TCDS. Css was 15%-20% lower for the TCDS compared to the OC.

EE Pharmacokinetic Profile TCDS compared to OC			
Statistics	AG200-15	Ortho-Cyclen®	P Value
	Css (48-168h)	Cavg (Based on AUC (0-24h)	
N	32	32	
Mean (SD) pg/ml	35.7 (14.5)	41.5 (13.4)	P < 0.02

CONCLUSION: The calculated daily dose of the TCDS was equivalent to approximately 30 µg EE and exposure in the TCDS was substantially less than the 35 ug combination OC. Daily EE exposure with the low-dose TCDS (AG200-15) is well within the range reported for low dose OC.
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