

ENSURING RELIABILITY IN LABORATORY DIAGNOSTICS: COMPARATIVE STUDY OF ESTRADIOL RESULTS ACROSS ANALYTICAL AND MIDDLEWARE SYSTEMS

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INTRODUCTION

Accurate determination of estradiol is important in laboratory diagnostics, particularly in clinical and endocrine assessments. Reliable results depend not only on the performance of analytical systems but also on the effectiveness of post-analytical data management tools.

AIM OF THE STUDY

The aim of this study was to perform a comparative analysis of estradiol results obtained from two laboratory systems, an analytical platform (Atellica) and a middleware system (Remisol), using 15 patient samples.

STUDY OVERVIEW



15
patient samples



Analytical system
Atellica



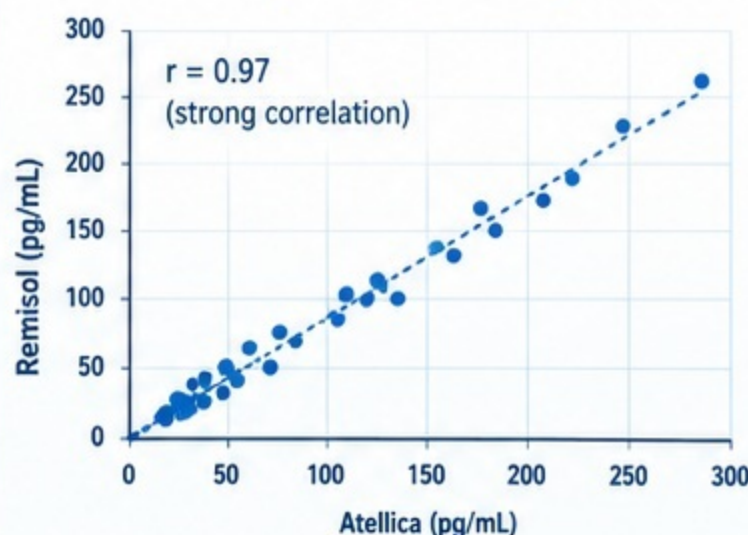
Middleware system
Remisol



Statistical analysis
Correlation, percentage difference (bias),
analytical limits

RESULTS

Correlation of Estradiol Results
(Atellica vs. Remisol)

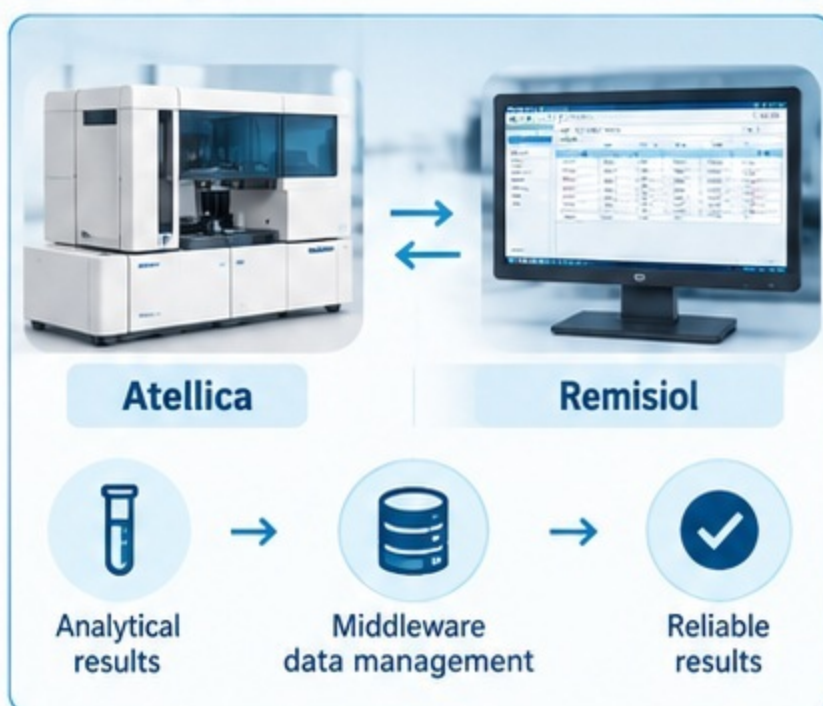


Percentage difference (bias)

Bias range	Number of samples
< 5%	7
5 – 10%	5
10 – 15%	2
> 15%	1



The observed variability remained within acceptable analytical limits, suggesting good agreement between the systems in routine laboratory practice.



CONCLUSION

The findings highlight the necessity of continuous verification and quality assessment of both analytical and post-analytical processes. Combined evaluation of analytical performance and data management is essential for ensuring accuracy, consistency, and reliability of laboratory diagnostic results.



KEY MESSAGE

*Reliable laboratory results are achieved
through the synergy of accurate analysis
and effective data management.*