

## **Biostatistics:**

### **Glossary of some terms for the interest of the Nephrologists.**

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Absolute risk reduction — Risk difference between the control group and the intervention group.

Adjusted odds ratio — The odds ratio obtained after eliminating the effect of other concomitant variables that might be affecting the OR. This is generally obtained by including these concomitants in the logistic regression.

Allocation bias — The systematic error in results arising from specific allocation of subjects to the test and control group, such as due to nonrandom allocation.

Alpha error — Same as Type I error.

Alternative hypothesis — A plausible hypothesis that is accepted by default when the null hypothesis is rejected.

Analysis of variance — Breaking variance into its components such as within groups and between groups. This method is used in regression analysis and in various other situations but more commonly for comparing three or more means.

Analytical study — A study with the objective to identify the determinants or correlates of an outcome, such as aetiological factors, or to delineate their specific contribution to the outcome. See observational study, experiment.

ANCOVA — Acronym for analysis of covariance. A statistical procedure used when the dependent (or outcome) variable is quantitative, and the independent (or antecedents) variables are a mixture of quantitative and qualitative variables.

ANOVA — Analysis of variance. A method for analysis of quantitative outcome dependent on qualitative characteristics, particularly groups of subjects.

Area under the curve — The area from the ROC curve to the base: used as an indicator of the efficacy of a test in terms of sensitivity and specificity – can be used to compare performance of various tests. The area under the concentration curve is used to assess performance of a regimen and to compare performance of two or more regimens.

Arithmetic mean — Same as mean.

Assessment Bias — Bias due to paying more attention to cases than controls in assessment, or giving more attention to specific outcomes of interest. Such as more accurate history is given by diseased are more cooperative than the others, observer is able to establish more rapport with some respondents than others, e.g., due to cultural similarities.

Association — Change in one qualitative factor being accompanied by the change in the other. Which could be causal, incidental, or due to a third intervening factor. The association can be full or partial of various degrees, and can be negative or positive.

ANCOVA: Analysis of covariance is just multiple regression (i.e., a linear model) where one variable is of major interest and is categorical (e.g., treatment group).

**ANOVA:** Analysis of variance usually refers to an analysis of a continuous dependent variable where all the predictor variables are categorical.

**Bias:** A systematic error. Bias typically pertains to the discrepancy between the average of many estimates over repeated sampling and the true value of a parameter.

**Binary variable:** A variable whose only two possible values, usually zero and one. A characteristics that is assessed only in two.

**Baseline data** — The data that show the status of the subjects at the initial stage, generally at the time of beginning of the study. The baseline is used for evaluating any subsequent change either due to intervention or otherwise.

**Bell-shaped distribution** — Same as Gaussian distribution.

**Beta error** — Same as Type II error.

**Case-control study:** A study in which subjects are selected on the basis of their outcomes, and then exposures (treatments) are ascertained.

**Categorical variable:** A variable having only certain possible values for which there is no logical ordering of the values.

**Confidence limits:** To say that the 0.95 confidence limits for an unknown quantity are [a, b] means that 95% certainty that the unknown value will be within the confidence limits.

**Continuous variable:** A variable that can take on any number of possible values. Practically speaking, when a variable can take on at least, say, 10 values, it can be treated as a continuous variable.