**Analysis on the Effect of Platelet Rich Plasma (PRP) on Pain in Orthopedic cases**

**Overview**

The analysis is based on eighteen studies. The effect size index is the standardized difference in means (d).

**Statistical model**

The random-effects model was employed for the analysis. The studies in the analysis are assumed to be a random sample from a universe of potential studies, and this analysis will be used to make an inference to that universe.

**What is the mean effect size?**

The mean effect size is -0.632 with a 95% confidence interval of -0.978 to -0.286.

The Z-value tests the null hypothesis that the mean effect size is zero. The Z-value is -3.582 with p < 0.001. Using a criterion alpha of 0.050, we reject the null hypothesis and conclude that in the universe of populations comparable to those in the analysis, the mean effect size is not precisely zero.

**The Q-test for heterogeneity**

The Q-statistic provides a test of the null hypothesis that all studies in the analysis share a common effect size. If all studies shared the same true effect size, the expected value of Q would be equal to the degrees of freedom (the number of studies minus 1). The Q-value is 166.574 with 17 degrees of freedom and p < 0.001. Using a criterion alpha of 0.100, we can reject the null hypothesis that the true effect size is the same in all these studies.

**I2 statistic**

The I-squared statistic is 90%, which tells us that some 90% of the variance in observed effects reflects variance in true effects rather than sampling error.

**Tau-squared and tau**

Tau-squared, the variance of true effect sizes, is 0.480 in d units. Tau, the standard deviation of true effect sizes, is 0.693 in d units.

**The prediction interval**

If we assume that the true effects are normally distributed (in d units), we can estimate that the prediction interval is -2.148 to 0.883. The true effect size in 95% of all comparable populations falls in this interval.

**FOREST PLOT OF PAIN OUTCOME**

**Analysis on the Effect of Platelet Rich Plasma (PRP) on Functional outcome in Orthopedic cases**

**Overview**

The analysis is based on four studies. The effect size index is the standardized difference in means (d).

**Statistical model**

The random-effects model was employed for the analysis. The studies in the analysis are assumed to be a random sample from a universe of potential studies, and this analysis will be used to make an inference to that universe.

**What is the mean effect size?**

The mean effect size is -0.481 with a 95% confidence interval of -1.592 to 0.629.

The Z-value tests the null hypothesis that the mean effect size is zero. The Z-value is -0.849 with p = 0.396. Using a criterion alpha of 0.050, we cannot reject this null hypothesis.

**The Q-test for heterogeneity**

The Q-statistic provides a test of the null hypothesis that all studies in the analysis share a common effect size. If all studies shared the same true effect size, the expected value of Q would be equal to the degrees of freedom (the number of studies minus 1). The Q-value is 76.496 with 3 degrees of freedom and p < 0.001. Using a criterion alpha of 0.100, we can reject the null hypothesis that the true effect size is the same in all these studies.

**The I-squared statistic**

The I-squared statistic is 96%, which tells us that some 96% of the variance in observed effects reflects variance in true effects rather than sampling error.

**Tau-squared and tau**

Tau-squared, the variance of true effect sizes, is 1.212 in d units. Tau, the standard deviation of true effect sizes, is 1.101 in d units.

**The prediction interval**

If we assume that the true effects are normally distributed (in d units), we can estimate that the prediction interval is -5.808 to 4.845. The true effect size in 95% of all comparable populations falls in this interval.

This analysis includes four studies. As a general rule, estimates of heterogeneity based on less than ten studies are not likely to be reliable.

**FORESTPLOT OF FUNCTIONAL OUTCOME**

