Report: (max 4 pages w/o references)

Title: BS9001: Meta-analysis of breast cancer using data science techniques

Abstract (max 150 words) (to be done last)

**Introduction (1 to 3 paragraphs)**

Meta-analysis is essentially a statistical analysis that condenses the results of several scientific studies.1 Benefits of performing a meta-analysis is the combination of data, resulting in a higher statistical power and more robust point estimates than from individual studies.1 The steps in a meta-analysis include formulation of the research question, literature research, selection of studies, decision of which dependent variables are allowed, selection of a meta-analysis model, and examination of heterogeneity between studies.3 In this study, the stage of progress is done until the selection of studies.

Breast cancer is the development of cancerous tissue from breast tissue.4 Among breast cancers, cancers of the ducts are known as ductal carcinomas, and cancers of the lobules are known as lobular carcinomas.2 In this study, the type of breast cancer studied is known as Invasive Ductal Carcinoma or Infiltrating Ductal Carcinoma (IDC). IDC is the most common type of breast cancer, causing up to 80% of breast cancer cases.2

Cancer is a leading cause of death, with breast cancer being the most common cancer among women, totalling two million cases worldwide.2 Therefore, it is important to understand the genetic profiling of cancer among various studies to pinpoint the various significant genes that are highly associated with IDC. In this study, the aim is to obtain genetic expression data from genetic databases, to clean and manipulate it for use in the future meta-analysis.

**Methods (1 to 3 paragraphs)**

Extraction of data from database

Compression of exprs data from each gene into means

Bootstrap method

**Results (1 to 3 paragraphs)**

**Discussion (1 to 3 paragraphs)**

**References**

1. Fagard RH, Staessen JA, Thijs L. Advantages and disadvantages of the meta-analysis approach. J Hypertens Suppl. 1996 Sep;14(2):S9-12; discussion S13.
2. Ganesh N. Sharma, Rahul Dave, Jyotsana Sanadya, Piush Sharma, and K. K Sharma. Various Types And Management Of Breast Cancer: An Overview. J Adv Pharm Technol Res. 2010 Apr-Jun; 1(2): 109–126.
3. Higgins JPT, Green S (editors). Cochrane Handbook for Systematic Reviews of Interventions Version 5.1.0 [updated March 2011]. The Cochrane Collaboration, 2011. Available from <http://handbook.cochrane.org>.
4. Timothy J Key, Pia K Verkasalo, Emily Banks. Epidemiology of breast cancer. The Lancet, Oncology Volume 2, Issue 3, March 2001, Pages 133-140.