

Analysis of Breast Cancer using Weighted Sum Method (WSM)

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Abstract: Breast cancer begins as localized disease, but it can spread to lymph nodes and spread to distant organs. In primary diagnosis, prognostic markers are used to assess systemic disease has changed in a current model of metastasis, where metastatic potential reflects a phenomenological view derived from the characterize DNA breast, a feature that intrinsically supports this method in the idea that they may have metastatic potential. These data contribute to our understanding of prognosis and have metastasis implications, as this profile may differentiate a bone-metastasis cluster from a lung-poorly differentiated, making analysis imprecise. Complete for predicting metastasis risk in various human tumors, including breast, only for known tumors and breast, prostate. In imaging pulmonary pleural effusion, chest X-ray and US are more accurate in detection will be useful. Son graphic to be estrogen receptor-positive; a bArest tumor has the potential to transform bone there are also cancer stem cells found In other human cancers such as once-metastatic tumors and breast cancer metastases from various organs. Bone, lung, and liver are the most common sites. Breast cancer metastatic spread in Western women sites are leading. More recently, breast cancer mammographic screening and systemic adjuvant therapy have been shown to predict metastasis and mortality rates patients.

Keywords: breast cancer, DNA, mammographic

1. Introduction

Breast cancer begins as localized spreads spreads to distant organs. In systemic disease has changed in a current model of metastasis, where metastatic potential reflects a phenomenological view derived from the origin of the tumor shown airway hyperplasia to be sufficient predictors of characteristics such as unquantified or unestablished response value for cessation. Plain chest radiographs show that The inflamed pleura produces small amounts of oxidants in the chest and routine follow-up patients have a pleural line with a clinical diagnosis of pleurisy, whereas liver function tests produce abnormal, ill-defined individuals. Polycyclic and hypo echoic pleural effusions are Small value testing. Liver disease Although Many serious liver diseases are normal and asymptomatic in healthy people, they occur in individuals with abnormal conditions where a spring regenerates bone—that is, bone restoration increases directly with increasing load, and bone is expelled Returns after loading. Indeed, Bone does not act as a perfect spring, and the adrenal gland is highly associated with chemically induced lesions. The common endocrine organ is called organelle, and these criteria are the autophagic gastrointestinal micro flora, which always grows ventrally in normal adults Forms specific colonies Parts of the pathway,



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their human skin is repeatedly exposed, and the function of many cells and the survival of organisms depends on its number, which is considered the main cause of skin cancer regionalization analysis of brain activity are widely used to map changes in magnetic resonance imaging health problem.

Lung Smoking status is the most powerful predictor lung function Decrease in smokers with COPD. If you are a smoker advised older people are more likely to quit because they cannot stop smoking or their lungs are already damaged. Similarly, there is a nihilistic approach to that intervenes in smoking cessation. Previous studies of lung function related hypertrophy responsiveness In a prospective randomized clinical trial pulmonary We are North American Medical Centers examined two smoking cessation interventions for Light smokers or Moderate airway obstruction. Annually of Measure Long Bunch Participants water stop smoking showed improvements mean agonist reactivity, baseline Methacholine reactivity, age, sex, race, and baseline year did predict Changes in lung function. Bronchial obstruction bronchial hyperactivity may benefit from quitting.

Pleura An Increased back echo volume a pleural effusion cannot be used as a back marker of Fluid collection. High resistance contrast and bulk reflectivity in the costal pleura can lead multiple artifacts in pleural effusions reflecting internal. Artifacts, respiratory artifacts circulated respiration and artifacts on the lung surface move parallel to the visceral pleura respiration. Radiographs show that inflamed pleura produce a amount oxidizing in the chest. The clinical presentation of pleurisy in patients with and routine follow-up was a diagnosis of interrupted pleural line, whereas those with irregularly formed, poorly defined, polycyclic and hypo echoic pleural effusions. Local pleural effusion and increased blood flow integrated into the visceral pleura are seen by color Doppler in patients with pathological findings on ultrasound. Clinical signs of pleurisy are early signs of tuberculosis, especially if sub pleural infiltration is found over. Considerable thickening of the pleura is seen in emphysema, inflammatory fibers leading to the pleura. Fibrin is slightly higher acrogenic than swollen pleura.

Liver A single liver function test is of little value diagnosing Liver disease many serious liver diseases may be commonly associated conditions seen. However, battery Liver function tests is very Sensing process. Number minimized by this technique application a liver tests is associated higher A model of characteristics helps direct Next diagnosis workup of specific liver disease the population potential liver involvement can help the doctor to efficiently Identify the cause systemic diseases or changes in drug therapy. The liver has to perform various biochemical reactions the liver. All laboratories use common tests for the early diagnosis and liver management disease, And these tests often called "liver function tests," Although they are of little value in assessing liver function. Despite many criticisms, The phrase 'liver function tests' is definitive established among these established terms in the medical dictionary. Arguably the term 'liver injury tests' is more appropriate Also, examination interpreting medical history physical activity.

Bone The animal model he chooses determines, to a large extent, what biomechanical experiments can be performed on the bones of large animals, medium and large dogs, but the test selection is limited to small animals. For example, with mice, you would

usually control experiments such as bending or twisting long bones and compressing. Accurately measuring the mechanical properties of cancellor's bone in rats is difficult, but not impossible. Primary bone cores can be removed from the lumbar vertebral bodies of rats for compression tests. However, the bony cores of these primaries, so the resulting mechanical measurements are imprecise. Compression tests of vertebral bodies are commonly spinal cord confusing. Therefore, if bone strength is the endpoint, an appropriate animal model should be selected are very accurate, if not perfect, to allow comparisons between treatment groups and controls. A spring follows the bone into the region of and the bone returns to its original shape. loading. In fact, bone does not act as a perfect spring. Viscous effects occur during deformation due to fluids in the bone matrix, and some loss of elasticity, however, treating bone as a spring is a reasonable mathematical approximation; otherwise, the stress analysis becomes more complicated The slope of the elastic portion external stiffness or stiffness of the structure. Larger bones are generally more rigid. If the load is to be converted into stress and deformation by engineering formulas, the stress will also be in the bone. The relationship between stresses difference can be explained as follows: we are comparing the skeletal characteristics of. Clearly, bone is more rigid.

Adrenal gland The adrenal gland is said chemical stimulation lesions. Understanding the structure and function of the adrenal gland critical interpreting symptoms mechanisms drug- Induced ulcers. Adrenal cortex is essential to especially not necessarily to Life. Current reviews of the adrenal gland are produced by cabana and other chemicals that Disrupts such as induced toxicity, these effects may toxic specifically to Adrenal gland. The adrenal gland unique features important for function in terms of glandular blood supply and the Development of lesions. It is provided by the glandular arteries, which few arteries supply blood directly to the medulla, contains Sources of blood, namely cortical capillaries and primary arterioles the blood drains from adrenal gland through the modularly Nerves.

Gastrointestinal These criteria are that autotrophic gastrointestinal micro biota can grow aerobically, are Specific colonization, always seen in normal adults, colonize their habitats successively in baby animals, climax communities can maintain a constant population size, and are in close contact with intestinal epithelium colonized are Undoubtedly incomplete and will need currently developed, the mechanisms of interaction the gastrointestinal have proven useful in distinguishing the pathways of non-indigenous microbes and indigenous from their Animal hosts. As demonstrated later, also for ecology, Localization and succession of microbial communities in the gastrointestinal tract. Likewise, little evidence supports this animal hypothesis immune responses Affects tribal composition micro biome some bacteria inhabiting the gastrointestinal tract induces detectable antibodies by serum and intestinal secretions or by the host's Spleen cells. At present, such evidence should treated caution as investigators conducting studies using microbes were to be they are truly autotrophic for habitats in the gastrointestinal tract inhabit been. Extreme caution should be exercised by demonstrating that the ability to induce antibodies in predisposed microorganisms is poor or completely absent, which is not uncommon, especially when in the gastrointestinal tract upon examination, mucus where they generally occupy the habitat.

Skin

Human skin undergoes repeated exposures, and Function and survival of multiple cell types is thought to be a major cause Skin cancer. Melanin is traditionally believed to be the most important photosynthetic in skin pigmentation acts as a broadband absorber and also Antioxidant and astringent cleansing. Additionally, several Epidemiological studies a lower Incidence of skin cancer dark-skinned Individuals. Skin pigmentation has cultural and cosmetic significance, although the role of melanin photo protection and its effect on skin cancer prevention. There are many epidemiological studies shown that the of skin is lower dark-skinned people compared to dark-skinned people. However, although the for a and pigmentation photosynthesis, a culturally and cosmetically significant skin pigment, is more complex than previously thought. In light of induced skin cancer and, skin cells undergo induced damage and malignant transformation. A better understanding melanin's prevention is contrary to the common perception that healthy is better than desirable.

Brain

Functional brain imaging with positron emission tomography and magnetic resonance imaging is widely Used to map regional changes in the brain function advanced over Last decade. Appreciating unique contribution of aerobics glycol sis new insights into the role of brain energy metabolism atropines signal transduction have emerged. So is our understanding neurophysiologic Processes responsible for imaging signals advanced a hypothesis. A neuron's spiking activity (output) is well suited to focus on its is ongoing within brain systems and it has alerted us to costly innateness processes that underlie much Functional activity of the brain. The In most textbooks quality teaching is power required Brain activity (oxygen that is not used in the brain bound to hemoglobin in red blood cells), which logically follows the brain's imperative depend in continuous supply of oxygen through flow for its immediate function. It provided by brain through, starting with glycol cist and ending with oxidative phosphorylation its easy considered that are inextricably linked in the normal brain.

Pancreas Pancreas transplantation performed in three different categories diabetes patients Classified according to level of Renal Function: Pancreas-Kidney transplantation after kidney transplant (previously) uremic or patients with end-stage renal disease; and Pancreas transplantation alone in non-uraemic patients. According to the data from United Network for Organ Sharing and International Pancreatic, deceased-donor pancreas transplants are classified goal Establishing insulin-independence and dialysis-free status.

Kidney Chronic kidney disease is a global a public health problem with increasing incidence and prevalence, poor outcomes and high cost. Consequences Chronic kidney disease includes from Decreased renal are adverse effects may It kidney disease remains detected often its results less treatment developmental. National Nephrology Latest Clinical practice guidelines. The foundation defines chronic categorizes it into conditions regardless of the underlying cause. Evaluation of parameters for clinical evaluation of renal disease, correlates measures renal stratifies of renal from cardiovascular events with disease activity and progression. Guidelines were developed using the Fundamental Approach process.

2. Weighted Sum Method (WSM)

In decision theory, WSM is one of the most well-known MCDM methods, and this is one of the simplest methods of evaluating alternatives based on certain criteria. All data provided is in one dimension Or WSM is valid only when in unit. Among MCDM methods, WSM alone cannot be used for multidimensional problems. Multidimensional means that all quantities have different units. Besides using WSM, There are other methods that can solve a one-dimensional problem. However, they were originally developed with the aim of solving multidimensional problems; a special method makes the WSM method. The weighted scoring system only works with numerical data. Hence, each substitution before calculating the final score Evaluation should be done against each evaluation criteria. In case of component selection, no direct evaluation will be given for any criteria other than user satisfaction and optimization criteria. Therefore, relevant to each evaluation criterion all alternatives consider the user requirements of the software components are evaluated first.

Table 1. Evaluation parameters Criteria for segmental attractiveness

C1	Lung
C2	Pleura
C3	Liver
C4	Bone
C5	Adrenal glands
C6	Gastrointestinal
C7	Skin
C8	Brain
C9	Pancreas
C10	Kidney

Table 2. TABLE.2 Alternative parameters

A1	Invasive ductal carcinoma, not otherwise specified
A2	Invasive lobular carcinoma
A3	Mixed type, lobular and ductal features
A4	Tubular/invasive cribriform carcinoma
A5	Mucinous carcinoma
A6	Medullary carcinoma

Table 3. Breast Cancer

Data set										
	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
A1	54.12	38.65	36.58	15.98	45.21	39.47	42.69	34.22	29.55	47.89
A2	78.46	45.36	42.97	45.25	27.39	38.65	48.55	39.58	44.57	28.32
A3	54.12	42.56	45.11	24.23	45.36	36.48	28.69	38.79	32.49	29.78
A4	63.12	65.96	72.51	57.98	68.16	75.32	69.65	82.37	61.28	59.87
A5	58.42	54.65	86.41	57.39	68.29	74.16	82.1	64.21	67.52	71.24
A6	56.12	58.36	52.36	65.32	87.25	54.58	64.36	59.57	68.11	57.95

Table.3 shows the Breast Cancer data set Evaluation Preference: Lung, Pleura, Liver, Bone, Adrenal glands, Gastrointestinal, Skin, Brain, Pancreas, and Kidney. Alternative: Invasive ductal carcinoma, not otherwise specified, Invasive lobular carcinoma, mixed type, lobular and ductal features, Tubular/invasive cribriform carcinoma, Mucinous carcinoma, Medullary carcinoma.

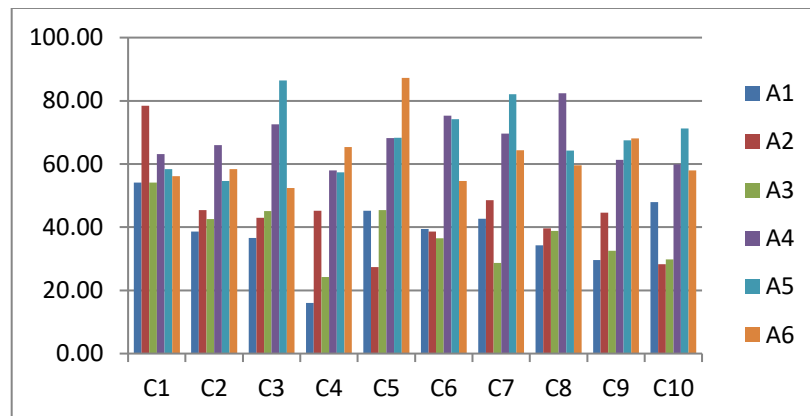


Figure 1 shows the graphical representation Evaluation Preference: Lung, Pleura, Liver, Bone, Adrenal glands, Gastrointestinal, Skin, Brain, Pancreas, and Kidney. Alternative: Invasive ductal carcinoma, not otherwise specified, Invasive lobular carcinoma, mixed type, lobular and ductal features, Tubular/invasive cribriform carcinoma, Mucinous carcinoma, Medullary carcinoma.

Table 4. Performance value

Performance value									
0.6898	0.4926	0.4233	0.2446	0.5182	0.5240	0.5200	0.4154	0.4339	0.6722
1.0000	0.5781	0.5477	0.6927	0.3139	0.5131	0.5914	0.4805	0.6544	0.3975
0.6898	0.5424	0.5749	0.3709	0.5199	0.4843	0.3495	0.4709	0.4770	0.4180
0.8045	0.8407	0.9242	0.8876	0.7812	1.0000	0.8484	1.0000	0.8997	0.8404
0.7446	0.6965	1.1013	0.8786	0.7827	0.9846	1.0000	0.7795	0.9913	1.0000
0.7153	0.7438	0.6673	1.0000	1.0000	0.7246	0.7839	0.7232	1.0000	0.8134

Table.4 shows the performance value for Materials selection. Evaluation Preference: Lung, Pleura, Liver, Bone, Adrenal glands, Gastrointestinal, Skin, Brain, Pancreas, and Kidney. Alternative: Invasive ductal carcinoma, not otherwise specified, Invasive

lobular carcinoma, mixed type, lobular and ductal features, Tubular/invasive cribriform carcinoma, Mucinous carcinoma, Medullary carcinoma.

Table 5. Weight

Weight									
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25

Table.5 shows the Weight ages used for the analysis. We have taken same weights for all the parameters for the analysis.

Table 6. Weighted normalized decision matrix

Weighted normalized decision matrix									
0.1724	0.1232	0.1058	0.0612	0.1295	0.1310	0.1300	0.1039	0.1085	0.1681
0.2500	0.1445	0.1369	0.1732	0.0785	0.1283	0.1478	0.1201	0.1636	0.0994
0.1724	0.1356	0.1437	0.0927	0.1300	0.1211	0.0874	0.1177	0.1193	0.1045
0.2011	0.2102	0.2310	0.2219	0.1953	0.2500	0.2121	0.2500	0.2249	0.2101
0.1861	0.1741	0.2753	0.2196	0.1957	0.2461	0.2500	0.1949	0.2478	0.2500
0.1788	0.1860	0.1668	0.2500	0.2500	0.1812	0.1960	0.1808	0.2500	0.2034

Table. 6 show the Weighted Normalized Decision Matrix. Evaluation Preference: Lung, Pleura, Liver, Bone, Adrenal glands, Gastrointestinal, Skin, Brain, Pancreas, and Kidney. Alternative: Invasive ductal carcinoma, not otherwise specified, Invasive lobular carcinoma, mixed type, lobular and ductal features, Tubular/invasive cribriform carcinoma, Mucinous carcinoma, Medullary carcinoma.

Table 7. Preference Score

Preference Score	
A1	1.23352
A2	1.44235
A3	1.22444
A4	2.20666
A5	2.23980
A6	2.04291

Table.7 shows the Preference Score value Invasive ductal carcinoma not otherwise specified=1.23352, Invasive lobular carcinoma =1.44235, mixed type, lobular and

ductal features =1.22444, Tubular/invasive cribriform carcinoma=2.20666, Mucinous carcinoma=2.23980, Medullary carcinoma =2.04291.

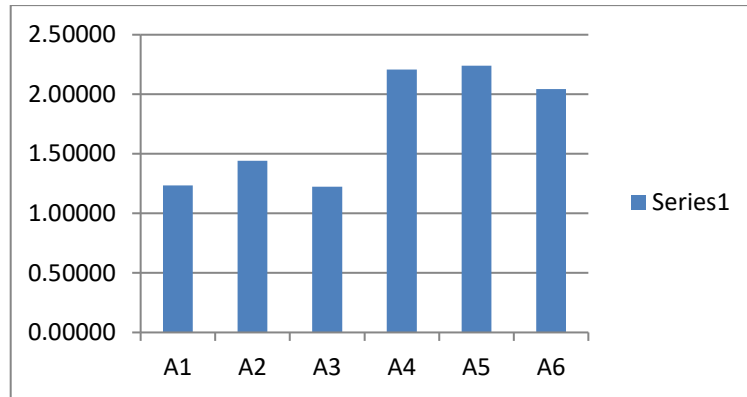


Figure 2 shows the preference Score for Tubular/invasive cribriform carcinoma=2.20666 is showing the highest value for preference score and mixed type, lobular and ductal features =1.22444is showing the lowest value.

Table 8. Ranks

Rank	
Invasive ductal carcinoma, not otherwise specified	5
Invasive lobular carcinoma	4
Mixed type, lobular and ductal features	6
Mucinous carcinoma	2
Tubular/invasive cribriform carcinoma	1
Medullary carcinoma	3

Table.8 shows the final result of this paper the rank Invasive ductal carcinoma, not otherwise specified fifth rank, Invasive lobular carcinoma fourth rank, Mixed type, lobular and ductal features six rank, Mucinous carcinoma second rank, Tubular/invasive cribriform carcinoma first rank, Medullary carcinoma third rank

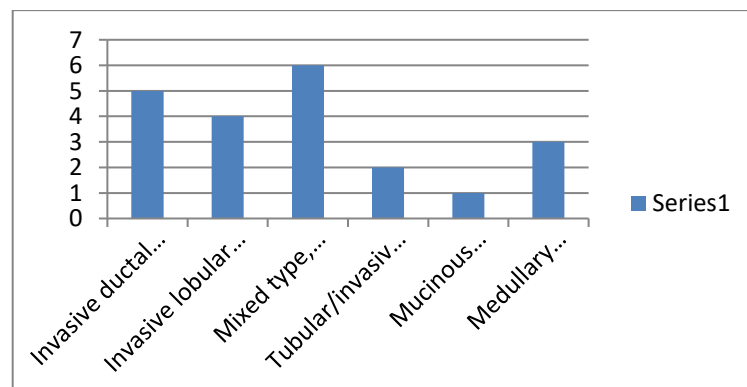


Figure 3 shows the graphical view of the final result of this paper the Invasive ductal carcinoma, not otherwise specified fifth rank, Invasive lobular carcinoma fourth rank, Mixed type, lobular and ductal features six rank, Mucinous carcinoma second rank, Tubular/invasive cribriform carcinoma first rank, Medullary carcinoma third rank The final result is done by using the WSM method.

3. Conclusion

Breast cancer begins as localized Sick, but it can spread to distant organs. In For primary diagnosis, prognostic markers are used to assess systemic disease has changed in a current model of metastasis, where metastatic potential reflects a phenomenological view derived from the origin of the tumor previous study shown airway hyperplasia to be sufficient predictors of characteristics such as unquantified or unestablished response value for Long-term benefits of quitting smoking. Plain chest radiographs show that The inflamed pleura produces small amounts deoxygenated in the chest and routine follow-up patients have a pleural line with a clinical diagnosis of pleurisy, whereas liver function tests produce abnormal, ill-defined individuals. , polycyclic and hypo echoic pleural effusions are Small value testing. Liver Disease Many serious liver diseases occur in healthy people, although normal and asymptomatic, they occur in individuals associated with abnormal conditions where a spring regenerates bone—that is, bone resumption increases directly with increasing load and bone exfoliation Returns after loading. Indeed, Bone does not act as a perfect spring, and the adrenal gland is highly associated with chemically induced lesions, called a common endocrine organ, and these criteria are autophagic gastrointestinal micro flora, which always grows ventrally in normal adults Forms specific colonies Parts of the pathway, their human skin is repeatedly exposed, and the function of many cells and the survival of organisms depends on its number, which is considered the main cause of skin cancer. Regionalization analysis of brain activity is widely used to map magnetic resonance imaging changes, public health problem.

Reference

- [1] Cowin, Pamela, Tracey M. Rowlands, and Sarah J. Hatsell. "Cadherins and catenins in breast cancer." *Current opinion in cell biology* 17, no. 5 (2005): 499-508.
- [2] Waks, Adrienne G., and Eric P. Winer. "Breast cancer treatment: a review." *Jama* 321, no. 3 (2019): 288-300.
- [3] Elmore, Joann G., Katrina Armstrong, Constance D. Lehman, and Suzanne W. Fletcher. "Screening for breast cancer." *Jama* 293, no. 10 (2005): 1245-1256.
- [4] Walker, Rosemary A. "The complexities of breast cancer desmoplasia." *Breast Cancer Research* 3, no. 3 (2001): 1-3.
- [5] Scully, Olivia Jane, Boon-Huat Bay, George Yip, and Yingnan Yu. "Breast cancer metastasis." *Cancer genomics & proteomics* 9, no. 5 (2012): 311-320.
- [6] Key, T. J. A., and Malcolm C. Pike. "The role of oestrogens and progestagens in the epidemiology and prevention of breast cancer." *European Journal of Cancer and Clinical Oncology* 24, no. 1 (1988): 29-43.
- [7] Weigelt, Britta, Johannes L. Peterse, and Laura J. Van't Veer. "Breast cancer metastasis: markers and models." *Nature reviews cancer* 5, no. 8 (2005): 591-602.

- [8] Krishna Kumar TP, M. Ramachandran, Sathiyaraj Chinnasamy, "Exploring Various Applications of Block Chain Technology", *Recent trends in Management and Commerce*, 1(1), (2020):92-96
- [9] Redig, Amanda J., and Sandra S. McAllister. "Breast cancer as a systemic disease: a view of metastasis." *Journal of internal medicine* 274, no. 2 (2013): 113-126.
- [10] Speer, John F., Victor E. Petrosky, Michael W. Retsky, and Robert H. Wardwell. "A stochastic numerical model of breast cancer growth that simulates clinical data." *Cancer Research* 44, no. 9 (1984): 4124-4130.
- [11] Ganz, Patricia A. "Psychological and social aspects of breast cancer." *Oncology* 22, no. 6 (2008): 642-642.
- [12] Darbre, Philippa D. "Aluminium, antiperspirants and breast cancer." *Journal of inorganic biochemistry* 99, no. 9 (2005): 1912-1919.
- [13] Grimshaw, Matthew J., Lucienne Cooper, Konstantinos Papazisis, Julia A. Coleman, Hermann R. Bohnenkamp, Laura Chiapero-Stanke, Joyce Taylor-Papadimitriou, and Joy M. Burchell. "Mammosphere culture of metastatic breast cancer cells enriches for tumorigenic breast cancer cells." *Breast Cancer Research* 10, no. 3 (2008): 1-10.
- [14] Dong, Xue-Yuan, Peng Guo, Jeff Boyd, Xiaodong Sun, Qunna Li, Wei Zhou, and Jin-Tang Dong. "Implication of snoRNA U50 in human breast cancer." *Journal of genetics and genomics* 36, no. 8 (2009): 447-454.
- [15] Esserman, Laura, Yiwey Shieh, and Ian Thompson. "Rethinking screening for breast cancer and prostate cancer." *Jama* 302, no. 15 (2009): 1685-1692.
- [16] Sathiyaraj Chinnasamy, M. Ramachandran, Prabakaran Nanjundan, Malarvizhi, "Analysis of Blind Spot in Heavy Vehicles using TOPSIS MCDM Method", *REST Journal on Advances in Mechanical Engineering*, 1(2), (2022):19-27
- [17] Wolfe, John N. "Breast patterns as an index of risk for developing breast cancer." *American Journal of Roentgenology* 126, no. 6 (1976): 1130-1137.
- [18] Lu, Jing, Patricia S. Steeg, Janet E. Price, Savitri Krishnamurthy, Sendurai A. Mani, James Reuben, Massimo Cristofanilli et al. "Breast cancer metastasis: challenges and opportunities." *Cancer research* 69, no. 12 (2009): 4951-4953.
- [19] Lu, Xin, and Yibin Kang. "Organotropism of breast cancer metastasis." *Journal of mammary gland biology and neoplasia* 12, no. 2 (2007): 153-162.
- [20] McKinney, Scott Mayer, Marcin Sieniek, Varun Godbole, Jonathan Godwin, Natasha Antropova, Hutan Ashrafian, Trevor Back et al. "International evaluation of an AI system for breast cancer screening." *Nature* 577, no. 7788 (2020): 89-94.
- [21] Hudis, Clifford A., and Luca Gianni. "Triple-negative breast cancer: an unmet medical need." *The oncologist* 16, no. S1 (2011): 1-11.
- [22] Bauer, Katrina R., Monica Brown, Rosemary D. Cress, Carol A. Parise, and Vincent Caggiano. "Descriptive analysis of estrogen receptor (ER)-negative, progesterone receptor (PR)-negative, and HER2-negative invasive breast cancer, the so-called triple-negative phenotype: a population-based study from the California cancer Registry." *cancer* 109, no. 9 (2007): 1721-1728.
- [23] McDonald, Elizabeth S., Amy S. Clark, Julia Tchou, Paul Zhang, and Gary M. Freedman. "Clinical diagnosis and management of breast cancer." *Journal of Nuclear Medicine* 57, no. Supplement 1 (2016): 9S-16S.
- [24] Sathiyaraj Chinnasamy, M. Ramachandran, Chinnasami Sivaji, "A Study on Ultraviolet Radiation and Its Effects", *REST Journal on Advances in Mechanical Engineering*, 1(2), (2022):1-9
- [25] Zardavas, Dimitrios, Alexandre Irrthum, Charles Swanton, and Martine Piccart. "Clinical management of breast cancer heterogeneity." *Nature reviews Clinical oncology* 12, no. 7 (2015): 381-394.
- [26] Simpson, Peter T., Jorge S. Reis-Filho, Theodora Gale, and Sunil R. Lakhani. "Molecular evolution of breast cancer." *The Journal of Pathology: A Journal of the Pathological Society of Great Britain and Ireland* 205, no. 2 (2005): 248-254.

- [27] Laloo, F., and D. G. Evans. "Familial breast cancer." *Clinical genetics* 82, no. 2 (2012): 105-114.
- [28] Scanlon, Paul D., John E. Connett, Lance A. Waller, Murray D. Altose, William C. Bailey, A. Sonia Buist, and DONALD P. TASHKIN for the Lung Health Study Research Group. "Smoking cessation and lung function in mild-to-moderate chronic obstructive pulmonary disease: the Lung Health Study." *American journal of respiratory and critical care medicine* 161, no. 2 (2000): 381-390.
- [29] Thapa, B. R., and Anuj Walia. "Liver function tests and their interpretation." *The Indian Journal of Pediatrics* 74, no. 7 (2007): 663-671.
- [30] Asrani, Sumeet K., Harshad Devarbhavi, John Eaton, and Patrick S. Kamath. "Burden of liver diseases in the world." *Journal of hepatology* 70, no. 1 (2019): 151-171.
- [31] Turner, Charles H., and David B. Burr. "Basic biomechanical measurements of bone: a tutorial." *Bone* 14, no. 4 (1993): 595-608.
- [32] Modlin, Irvin M., Mark Kidd, Igor Latich, Michelle N. Zikusoka, and Michael D. Shapiro. "Current status of gastrointestinal carcinoids." *Gastroenterology* 128, no. 6 (2005): 1717-1751.
- [33] Levey, Andrew S., Josef Coresh, Ethan Balk, Annamaria T. Kausz, Adeera Levin, Michael W. Steffes, Ronald J. Hogg, Ronald D. Perrone, Joseph Lau, and Garabed Eknoyan. "National Kidney Foundation practice guidelines for chronic kidney disease: evaluation, classification, and stratification." *Annals of internal medicine* 139, no. 2 (2003): 137-147.