Journal of Cancer Diagnosis

Mini Review Open Access

Cervical Cancer Diagnosis Using Data Mining Algorithm

Johnson Gurneey*

Department of Public Health, University of Otago, Wellington, New Zealand

Abstract

***Corresponding author:** Johnson Gurneey, Department of Public Health, University of Otago, Wellington, New Zealand, E-mail: johnson@otago.ac.nz

Received: 01-May-2023, Manuscript No: jcd-23-98346, **Editor Assigned:** 04-May-2023, Pre QC No: jcd-23-98346(PQ), **Reviewed:** 18-May-2023, QC No: jcd-23-98346, **Revised:** 23-May-2023, Manuscript No: jcd-23-98346(R), **Published:** 30-May-2023, DOI: 10.4172/2476-2253.1000178

Citation: Gurneey J (2023) Cervical Cancer Diagnosis Using Data Mining Algorithm. J Cancer Diagn 7: 178.

Materials and Methods

The UCI Machine Learning repository hosts the cervical cancer risk factors data set that was used in the study. It was compiled at the "Hospital Universitario de Caracas" in Caracas, Venezuela. It has 858 records, some of which have missing values because some patients choose not to respond to some questions out of respect for their privacy. 32 risk factors and 4 targets, or the cervical cancer diagnosis tests, are included in the data collection. It includes several feature sets, including recordings of behaviours, demographic data, history, and genomic medical information [12]. Age, Cancer Dx, CIN Dx, HPV Dx, and Dx characteristics don't have any missing data. Dx: CIN is an alteration in the cervix's walls that is frequently caused by HPV infection; if it is not treated effectively, it can occasionally progress to cancer. However, whether the patient has other cancer kinds or not is indicated by the Dx: cancer variable. A patient may occasionally have many cancer types. Some of the patients in the data set did not have cervical cancer, yet their Dx: cancer value was true. As a result, it is not a target variable [13].

The goal of this data is the most common diagnosis tests, with a brief description of each feature and the kind. Cervical cancer diagnosis typically involves a number of tests. Four frequently used diagnostic procedures for cervical cancer include Hinselmann, Schiller, cytology, and biopsy. The Hinselmann or Colposcopy test involves looking within the vagina and cervix with a device that magnifies the tissues in order to look for any irregularities. In the Schiller test, iodine is injected to the cervix [14], where it causes healthy cells to turn brown while leaving diseased cells uncoloured. In the cytology test, body cells from the uterine cervix are examined for any cancerous cells or other disorders. Additionally, the procedure known as a biopsy involves the microscopic examination of a small portion of cervical tissue. Most biopsy tests are capable of making important diagnoses [15].

The data collection had a significant amount of missing values; 24 of the 32 features had missing values. The characteristics with the highest percentage of missing values were initially eliminated. Since they have 787 missing values, or more than half of the data, the STDs: Time since initial diagnosis and STDs: Time since final diagnosis characteristics were eliminated. However, data imputation was carried out for the characteristics that had fewer missing elimina8-7.9(w)8(er2(t)-4.9(icT)23(y c)sg)ses acinad miarrix TDs: c

4. Mossé YP, Wood A, Maris JM (2009) Inhibition of ALK signaling for cancer therapy. Clin Cancer Res 15: 5609-5614.

5. Kadara H, Behrens C, Yuan P (2011)
signature for stage-I lung adenocarcinoma prognosis. Clin Cancer Res 17: 1490-1501.

6. Austin LA, Osseiran S, Evans CL (2016) Raman technologies in cancer diagnostics. Analyst 141: 476-503.

7. Bhattacharjee T, Khan A, Maru G, Ingle A, Krishna CM, et al. (2015) A preliminary Raman spectroscopic study of urine: diagnosis of breast cancer in animal models. Analyst 140: 456-466.

8. Huang ZW, McWilliams A, Lui H, McLean DI, Lam S, et al. (2003) Near-infrared Raman spectroscopy for optical diagnosis of lung cancer. Int J Cancer 107: 1047-1052.

9. Bergholt MS, Zheng W, Lin K (2011) In vivo diagnosis of gastric cancer using Raman endoscopy and ant colony optimization techniques. Int J Cancer 128: 2673-2680.

10. Haka AS, Volynskaya Z, Gardecki JA (2006) In vivo margin assessment during partial mastectomy breast surgery using Raman spectroscopy. Cancer Res 66: 3317-3322.

11. Pectasides D, Pectasides M, Nikolaou M (2005) Adjuvant and neoadjuvant chemotherapy in muscle invasive bladder cancer. Eur Urol 48: 60-67.

12. Mitchell E, Macdonald S, Campbell NC, Weller D, Macleod U, et al. (2008) Br J
Cancer 98: 68-70.

13. Singh H, Daci K, Petersen LA (2009) Missed opportunities to initiate endoscopic evaluation for colorectal cancer diagnosis. Am J Gastroenterol. 104: 2543-2554.

14. Ferrari M (2005) Cancer nanotechnology: opportunities and challenges. Nat Rev Cancer 5: 161-171.

15. Miller AD (2003) the problem with cationic liposome/micelle-based non-viral vector systems for gene therapy. Curr Med Chem 10: 1195-1211.

16. Cho K, Wang X, Nie S, Chen ZG, Shin DM, et al. (2008) Therapeutic nanoparticles for drug delivery in cancer. Clin Cancer Res 14: 1310-1316.

17. Davis ME, Chen ZG, Shin DM (2008) Nanoparticle therapeutics: an emerging treatment modality for cancer. Nat Rev Drug Discov 7: 771-782.

18. Lammers T, Hennink WE, Storm G (2003) Tumour-targeted nanomedicines: principles and practice. Br J Cancer 99: 392-397.

19. Byrne JD, Betancourt T, Brannon-Peppas L (2008) Active targeting schemes for nanoparticle systems in cancer therapeutics. Adv Drug Deliv Rev 60: 1615-1626.

20. Matsumura Y, Maeda H (1986) A new concept for macromolecular therapeutics in cancer chemotherapy: mechanism of tumoritropic accumulation of proteins and the antitumor agent smancs. Cancer Res.46: 6387-6392.