INTRODUCTION

Globally, bladder cancer is the sixth commonly cancer affecting men and the seventeen commonly cancer affecting women. Grade of bladder cancer shows to be higher in the develop countries, in which it represents the fourth commonly cancer in men(Leiblich, 2017). UK has the influence bladder cancer in men while in Europe ranks about fourteen lowest for women(Leiblich, 2017). Bladder cancer is a heterogeneous infection with meaningful prognostic, therapeutic and diagnostic objection (Soria et al., 2019).

The present diagnostic method for bladder cancer is cystoscopy associate with voided urine. Cystoscopy is an unsafe method approach with expressive cost and capable trauma and disease. Up to now voided urine cystoscopy stand as the procedure of interest for the detection of non-muscle bladder cancer. Although the method has very clear result, voided urine perceptivity is most desirable for low grade tumours (Hirasawa et al., 2021). Therefore, the growth of an exact diagnostic bladder cancer analysis that can be applied to non-invasively collected urine samples will benefit the physician and the patient. Best on the previous studies, many urine-based protein biomarkers have been identified as panel that are meaningfully associated with bladder cancer (Hirasawa et al., 2021).

Regardless of the achievement in the area of bladder cancer which include early identification and better treatment in the form of developing surgical equipment, radiotherapy techniques with the chemotherapeutic agents, the tumours remain the vital illness. It's proved that early detection of cancer will improve the attributive, deduction and reduce reoccurrence. Hence multiple examinations have been routed to diagnose and identify molecular markers, which will help in early diagnosis, guide, and treatment identify accurate prognostication(Chou et al., 2015)

A biomarker can be defined as molecular compound that can show a biological state. A lot of biomarker had been identified and determined in different studies in relation to bladder cancer. A diagnostic biomarker is a molecule that shows the presence of cancer, such as the presence of tumours, grade, its stages or clinical division. While the prognostic biomarkers show the outcomes of the disease. Examples of prognostic biomarkers in clinical procedures include oncotype Dx and Mamma print gene panels, they used to normally detect the repetition of disease in breast cancer and give vital information to the clinicians and the patient with potential information regarding the improvement of the chemotherapy (Dancik, 2015)

A set of pathological and clinical parameters can be used to predict the risk stratification in bladder cancer, which includes the complete of growth, repetition rate, and their forms presence of cancer in situ. Although they are only limited to determined clinical outcomes (Nagata et al., 2016). New methods for advanced muscle-invasive bladder cancer and effect predictive biomarkers on response to them are yet to be distinguished. However, the determination of biomarkers for the improvement of target therapy and new a method for advanced bladder cancer has to be determined.

The application of molecular predictive biomarkers in advanced muscle-invasive bladder cancer and molecular biomarkers of poor prognosis in post cystectomy patient will be discussed.

Some molecules acting theories behind the bladder cancer had been prove, it’s important to understand the molecular pathways of carcinoma genesis in bladder cancer before examining the prognostic and diagnostic biomarkers of bladder cancer. The idea of "field cancerization" was introduced in 1953, which is the thesis of multicentre cancer origins. A total of cells in normal epithelium structure control common genetic or epigenetic rage, the same as that identify in bladder cancer which might improve a ground for multiple tumor genesis. However, the "clone origin" theory says that bladder cancer begin from the unaddressed spare of a single transformed cell which can grow independently with subsequent variable genetic modification (Nagata et al., 2016).

Recent molecular biomarkers approach shows a different sample from metachronous and synchronal allopathic tumors can arise from monoclonal origin by breakdown according to the pattern of X-chromosome inactivation, TP53 mutation, and loss of heterozygosis. However, a member of gene has been distinguished that succeeded the "2-hit" model which include the two prototype suppressor genes: the retinoblastoma 1 (RB1) and TP53 genes (Nagata et al., 2016)' It is now well proven that accumulation of genetic alterations will form the basis of normal cell progress in bladder cancer, which referred to the process of multistep cancer. Recent investigations demonstrate that non-muscle invasive bladder cancer has different pathways in carcinogenesis. A pathway involved mutation of FGF receptor 3, will give rise to low-grade non muscle-invasive papillary tumors that often again but seldom invade likely wise, muscle-invasive bladder cancer and carcinoma in situ exhibit mutation or deletion of the TP53, RB1, ERBB2, OR PTEN.

Replication of cell cycle genes is also present, especially cyclin D1 (CCND1), which is the most commonly developed gene in bladder cancer (Batista et al., 2020). Genetics of bladder cancer have been demonstrated in over 10 years, but the outcomes have not yet been transferred to clinical practice in a strong way, mainly for NMIBC. Several biomarkers test is approved by the united states. In the present study we aim to critically review available biomarkers in bladder cancer, with some emergence molecules or tests that are interesting for the prognostic and diagnostic of the patient with bladder cancer.