



ABSTRACT

The most common prevalent pulmonary pathogen of human is *Pseudomonas aeruginosa* causing successfully opportunistic infections in immune suppressed patients of every age group. It is evident as a first or second major pathogen in most researches. It is the most lethal persistent pathogen of acute ventilator acquired pneumonia (VAP) and chronic Cystic fibrosis (CF) disease. Globally every year it results in major morbidity and mortality because of high recurrent significant infections rate and extensive virulence factors. In *Pseudomonas aeruginosa* global regulator of almost all genes of virulence factors is a quorum sensing system of which directly relates to its pathogenicity. Both gene *lasR* and *lasI* of *Pseudomonas aeruginosa* are component of *las* system of quorum sensing which regulates almost all genes of virulence factors. The recent study was designed to detect pulmonary infections associated genes *lasR* and *lasI* in *Pseudomonas aeruginosa* that is responsible for pulmonary infections. The sampling was done during January to May 2015, during this period total 105 samples out of which 45 early morning ETT secretions (Endotracheal tract) and 45 Blood samples from patients of acute Ventilator associated pneumonia (VAP) from CICU/SICU and 15 bronchoscopy samples of chronic Cystic fibrosis (CF) patients of Paediatric ward were collected from Mayo hospital Lahore. Total 9 strains of *Pseudomonas aeruginosa* was selected as most virulent strains after confirmatory test of antibiotic sensitivity and virulence assays. Later these pathogenic strains of *Pseudomonas aeruginosa* were used for ribotyping of genes *lasR* and *lasI*. PCR products results and sequence analysis results after BLAST at NCBI confirmed 100% presence of both genes *lasR* and *lasI* in the genome of *Pseudomonas aeruginosa* strains which are involved in multiple virulence factor and responsible for pulmonary infections. In the recent study the contribution of *lasR* and *lasI* gene of pathogenic *Pseudomonas aeruginosa* responsible for pulmonary infections in human was investigated.