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Letter to the Editor

How to Encounter Emerging Situation of Antibiotics Resistance among General Population of Pakistan

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For about 60 years, the discovery of antibiotics was a miracle in the field of medicine and dentistry and was labelled as a wonder drug to cure multiple infectious disease. Antibiotics reduced morbidity and mortality rate astonishingly.[1] Misuse of antibiotics is leading towards antibiotics resistance causing decreasing efficacy of treatment, increasing mortality rate, increasing burden on public health sectors with compromised quality of patient life.[2] Injudicious use of antibiotics during COVID-19 further contributed in drug resistance and also complicates treatment outcomes and prognosis.[3] Currently on average, 700,000 people lose their battle of life against infectious disease annually. By 2050, it is expected that antibiotics resistance would be the major cause of death.[4] As antibiotics resistance is emerging leading to increased hospitalization period of time, increasing burden on health sector, causing treatment failure and death of patient.[5]

Keeping in view the present situation of drug resistance, there are some practical measures and strategies to encounter emerging situation of antibiotics resistance among population of Pakistan. Antibiotics sensitivity testing should be done before drug prescription. Antibiotics sensitivity testing is a method by which specific bacteria can be identified. This can be done by all recommended methods e.g. from blood culture, urine culture, wound culture, sputum culture or throat culture. According to sensitivity report, appropriate antibiotics can be prescribed.[6] Susceptible antibiotics are those that can best fight with involved bacteria. If susceptible antibiotics group are not suitable for involved bacteria, health care provider can prescribe intermediate group of antibiotic with higher dose and for longer duration of time to increase efficacy. If involved bacteria is resistant to antibiotics group then combination of antibiotics can be used to treat infection. Choice of antibiotics is advisable to make after antibiotics sensitivity testing. It is advised to adopt selective empirical therapy having low potency and low tiered (SETLPLT)[7] and adopt antibiotics sensitivity testing therapy (AASTT). SETLPLT and AASTT is recommended to be adopted to minimize burden of antibiotics resistances. In all infections without having life threatening situations follow SETLPLT and AASTT. In all life threatening situations if it's not possible then follow short term empirical therapy (STET) immediately followed by antibiotics sensitivity testing to adopt antibiotics sensitivity testing therapy (AASTT) if required. These strategies of drug prescription will reduce or slow down the process of development of antibiotics resistances among human being. Burden of mortality and morbidity will be reduced if not eliminated. Unnecessary exposure of antibiotics with its consequent side effects will be reduced. Use of antibiotics can be reserved only when indicated so financial burden will also be reduced. So it is the need of the hour to take steps before it's too late.

In future, studies can be conducted to see effectiveness of SETLPLT and AASTT in non-life threatening situations and effectiveness of STET and AASTT in life threatening situations. In non-life threatening situations antibiotics prescription would target only that bacteria responsible for causing infection. While in life threatening situation first empirical therapy (STET) would be implemented but it would be of short duration and after that treatment strategy would be shifted towards AASTT thereby minimizing bacterial resistance to some extent. Overall these both strategies will reduce bacterial resistance. Reduced bacterial resistance will improve drug efficacy and will improve quality of life.

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Burden on public health sector will be reduced leading to improve financial situation of country. Benefits of antibiotics can be harvested very well.

So, keeping in mind the current situation of antibiotic resistance, it would be very wise to take actions and apply above mentioned strategies to reduce or eliminate antibiotics resistance.

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