WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 8, Issue 11, 1281-1285. Review Article ISSN 2277– 7105

A THOROUGH REVIEW ON AIR POLLUTION, ITS EFFECT ON HEALTH

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Article Received on
19 August 2019,

Revised on 09 Sept. 2019,
Accepted on 29 Sept. 2019,

DOI: 10.20959/wjpr201911-15515

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ABSTRACT

According to Enger and Smith- Pollution means, People produce in large quantities that it interfere with our health or well-being. As per research increase in case of death due to Air pollution. Air pollution is know increase in our surrounding due to human being. Air pollution classified into Natural pollutant, Primary pollutant, secondary pollutant. Air pollution is physical or chemical changes that result in air quality degradation. Urban ambient air is more polluted due to high density of population and their activities in urban; it produces air pollutants. Over last 10yr last, there has been increase in Particular matter (PM) air pollution is impact on Health and disease outcome. Occur closely at levels close to PM_{25}. The epidemiological and laboratory data demonstrated air pollutant contribute to various respiratory problems and cardiovascular problems. The Air Quality Health Index (AQHA) is tool developed by Health Canada and Enivormental Canada indicate level of Health risk from pollution on scale of 1 to 10. The tool useful for councelling High risk patient like asthma. significant morbidity and mortality is attributed to air pollutant, result in economic cost to society. Translating the correct scientific evidence into realistic and effective policies leads to reduce air pollution.so no longer costly toll on public health.

KEYWORDS: Air Pollutants, AQHA, PM, Disease Outcome.

INTRODUCTION

Air pollutants consist of six air pollutants – ozone (o_3), Particular matter (PM), Nitrogen dioxide (NO_2), Sulfar dioxide (SO2), Carbon Dioxide and lead. The purpose of present article

is to inform about association between ambient air pollution and adverse health outcomes.

ADVERSE EFFECTS OF AIR POLLUTANTS ON HEALTH

1. Mortality

Ambient air pollution linked to increase mortality in children and adults. Epidemological studies from American research reported that association between increased respiratory and cardiovascular mortality due to acute and chronic exposures to particulate air pollution. WHO 2014 report of cause of deaths are-Ischaemic heart diseases (40%), stoke (40%), chronic obstructive pulmonary disease (11%), lung cancer (6%) and acute lower respiratory infections in childrens (3%).[1] Sudden infant death syndrome a leading cause of postneonatal mortality in Canada and other developed countries.

Current 2008 Data estimate that effect of $PM_{2.5}$ air pollution responsible for at least 2900 premature deaths.[1] $PM_{2.5}$ concentrations leads to reduced lung function, heightenened severity of symptoms with asthmatics, COPD and ischaemic heart disease.[1]

1. Adverse Pregnancy outcomes

It includes premature birth, low birth weight, intrauterine growth retardation, abnormal birth length, abnormal head circumference.[5]

2. Vitamin D Deficiency

Ultra violet B radiation is important for conversion of 7 dehydrocholesterol to cholecalciferol Vit D_3. Ultraviolet B range reaching ground inversely proportional to level of ambient air pollution.[5]

3. School Absenteeism

Illness related school absenteeism these data are not consistent. Changes in daily air pollutant associated with illness related to abseentism like changes in $o_3$and so_2 linked to respiratory illness.[5]

5. Altered Immunity

Leonardi studied ambient air pollution may alter both cellular and humeral immunity in children.[5]

Health Effect of Air Pollution Exposure

a. Short Term

Cardiovascular - Myocardial infarction in those at risk Exacerbation of Cardic failure, Arrythmias.[9]

Respiratory - Exacerbation of asthma, Bronchitis Increased Wheeze.

b. Long Term

General - Increased Mortality.

Cardivovascular - Myocardial infarction, Atherosclerosis, Blood coagubility.

Espiratory - Pneumonia, Lung Cancer, Impaired Lung devolepment Development of new asthma.

Reproductive - Preterm Birth, low Birth Weight. Groups Vulnerable to effect of Air pollution.

Age - Children, old, outdoor Pepole.

1. Pre-existing disease - Asthma, Cardiac Disease, COPD.

SOURCE OF AIR POLLUTION

1. Particular Matter (PM) Sources- Coal combustion, Forest Fire, Shipping, Power Generation, Metal industry, Road transport, Diesel Exhaust Particles(DEPs), biomass combustion.[1]
2. Carbon Monoxide - Traffic, Coal combustion, Exhaust gas of vehicles, All burning Devices, mines.
3. Sulphur Dioxide - Refining of coil, oil, Gasoline, Plant combustion
4. Nitrogen Oxide – Traffic.
5. Ultrafine particular matter - Diesel Traffic.

The AQHI Categories

Health Risk

1. Low - 1 to 3 deal air quality
2. Moderate - 4 to 6 May Experience of coughing and throat irritation.
3. High - 7 to 10 Reduce or reschedule strenuous outdoor activities if Experience of coughing and throat irritation, Sore Eyes.
4. Very High - Above 10 Reduce or reschedule strenuous outdoor activities if Experience of coughing and Throat irritation, Reduce Physical activities, other Health problems The Air

Quality Health index can easily taught.

- At Risk Patients.
- Clinical Advice and management of asthma, Respiratory diseases, Cardiac diseases.
- Indicates current and next health risk in scale from 1 to 10.
- Councel patients to reduce exposoure to pollution so reduce amount of air pollutant delivered to lungs.

MANAGEMENT

1. Public awareness and Education[1]-

- Educated about relationship between air quality and ill health.
- Motivating changes in individual behavior and public policy.
- Awareness create cleaner enivorment and Healthier population.
- Air pollution not just harm human health also enivormental vegetations, animals, soil and air quality.

2. Services[1]-

- Air pollution monitoring, Forecasting and reporting.
- Smart Phone technology with low cost air quality index.

DISSCUSSION

Very large part of population breathe air pollutant. Health effect of PM most dangerous to health. short and long term exposure to PM cause cardiopulmonary mortality and morbidity. Diesel Exhaust Particle (DEP) classified as carcinogenic. Particular Matter (PM) information inform policy makers to legislate for cleaner air. As our cities grow, we need to aware of population and its effect.

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