

Effects of Pesticide Revelation Covert on Infectious Human Health in Haryana

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Abstract - Haryana is an agricultural foremost country located in northern part of India. Pesticide has become an essential element of their crop economy. The Pesticide residues were detected in the villagers' breast milk, milk, and blood samples of vegetables and fruits grown in the state. The Health issues associated with chronic Pesticide revelation include eye irritation, lung, nerve and kidney problems, cancer, mutagenesis, faetotoxic and teratogenic effects, immunological changes and effects on fertility. Various domestic and international studies, including research in Haryana, have demonstrated the harmful effects of Pesticide on human health. Haryana reported incidence of cancer. The Numerous studies have shown that farmers are more susceptible to leukemia, non-Hodgkin's lymphoma (NHL) and brain, sputum and skin cancer. The Revelation to Pesticide in the utero and childhood has been shown to be significantly associated with an increased risk of NHL. The geotaxis effects of Pesticide were shown by DNA damage studies using the comet assay, and deletions of the GSTM1 and GSTT1 genes were observed in Pesticide exposed individuals in Haryana. There is also a relationship between mothers exposed to Pesticide and recurrent abortions and premature births in the state. Similarly, a study showed that the risk of birth defects in pregnant women exposed to Pesticide is also increasing, including cleft lip and neural tube defects, Organ phosphorus insect and child exposed Pesticide act as developmental neurotoxin agents against the developing brain. An epidemiological study has shown that revelation to organ chlorine pesticides is associated with Parkinson's disease; it is reported that dieldrin is also a potential pathogen of Parkinson's disease. In addition, occupational revelation to pesticides was found to be associated with frequent infections and immune abnormalities. Repeated revelation to chlorpyrifos has been reported to cause immunological changes in peripheral lymphocyte phenotype. One study showed that Pesticide revelation was associated with decreased sperm quality. As a result, agricultural workers and villagers living in Haryana are highly exposed to various types of Pesticide and have direct and indirect evidence that the chemicals contained therein have many adverse health effects.

Keywords - Infectious, Health, Farm Insect Killer, Genotoxicity, Pesticide, Haryana

Introduction to Pesticide

The Pesticide are defined as chemicals used to prevent, destroy, repel or reduce any pests (including insects, rodents, weeds and microorganisms) (Blindauer et al, 2009). Pesticides are inherently toxic and toxic and can kill pests. They are also harmful to humans and animals because of their toxicity.

Pesticides are classified according to the particular organism they are acting on. These include pesticides, herbicides and fungicides, the former being the most contagious to human health. Synthetic Pesticide is very popular among agricultural workers because they are widely available, easy to apply and provide effective economic returns (Mathur et al., 2015). These agrochemicals have become essential in requiring agricultural work to increase crop yields and safe storage. In this regard, Pesticide is not good for humans. The Advances and advances in agricultural technology in India have led to a significant increase in the use of Pesticide in the country.

Health risks have been found to be significantly associated with environmental or occupational revelation to insect killers. Individuals can access these agrochemicals either directly or indirectly. Direct revelation to individuals who spray Pesticide on farms and orchards, while indirect contact is through ingestion of water, air, dust and food contaminated by Pesticide (Alavanja et al., 2014). Farmers are also exposed to various types of Pesticide or combinations thereof at the same time or in succession. This revelation involves a mixture of different chemicals making it difficult to diagnose the effects of specific chemicals (Kamel and Hoppin, 2014).

The Different factors play an important role in determining the extent of Pesticide revelation, including application methods, use of protective measures, maintenance of sanitary conditions, protection of evacuation and knowledge of risk factors. Some studies on occupational Pesticide revelation have been classified as exposing all members of the occupational group, usually farmers or farm workers, and sometimes considering the duration of work, so this method is highly likely to be misclassified.

In fact, farmers who hire others to apply for Pesticide may have limited personal revelation to insect killers; in Pesticide applicators, revelation times may vary widely. The adverse effects of Pesticide have been reported worldwide, but such research from India is still limited. Although the overall consumption of Pesticide throughout India is lower than in developed countries, water, soil and air are still generally contaminated with phosphate residues. This article reviews existing literature on the impact of Pesticide revelation on infectious human health, with particular reference to the people of Haryana in northwestern India. The Haryana is a foremost agricultural state and Pesticide has become an essential element of its crop economy. Pesticide residues were detected in villagers' blood samples and breast milk.

A study found organochlorine Pesticide residues in maternal and cord blood samples from the North Indian population. Most of the time, Pesticide toxicity may not be diagnosed as a villager, especially for women who have limited access to health care (Moses et al., 2013). Therefore, farm workers who have not been investigated for insecticides may also have high levels of Pesticide revelation or related health problems.

Assessing the utility of past and current revelations limits the utility of biomarkers, and because most modern Pesticide are not persistent, studies of chronic revelation rely primarily on questionnaire-based methods. However, biomarkers are useful in certain situations. For example, organ ochlorines have a long half-life, so serum levels can be used as markers for revelation to these.

Human Health Effects of Pesticide Revelation

Various national and international studies, including research in Haryana, document the harmful effects of Pesticide on human health. Health problems associated with Pesticide revelation include immediate irritations and acute and chronic effects that cause major illnesses. Health problems associated with chronic Pesticide revelation include eye irritation, lung, neurological and renal problems, cancer, mutagenesis, fetal toxicity and teratogenic effects, immunological changes and effects on fertility (Antle and Pingali, 2014). This is mild organ phosphorus poisoning and symptoms include headache, dizziness, nausea, vomiting, pupil contraction, excessive sweating, tearing and runny. This severe case of poisoning can cause muscle weakness and convulsions, bronchospasm and heart rate changes, sometimes causing convulsions and coma.

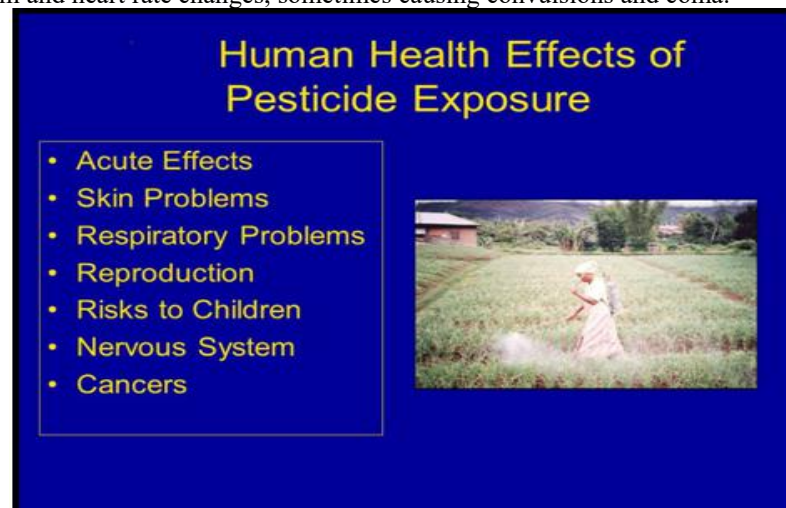


Figure 1: Showing Human Health Effects of Pesticide Revelation

The intermediate syndrome that occurs a few days after revelation is characterized by muscle weakness and can be fatal if the respiratory muscles are affected. Two to five weeks after revelation, patients may develop delayed-induced poly neuropathy induced by organic phosphate, which is a characteristic syndrome, including paresthesia muscle spasm, weakness and even paralysis, mainly in the legs.

Cancer Effect

The Cancer is a complex multi factorial disease, and genetic and environmental factors are among the reasons. In the past few decades, the incidence of cancer in Haryana has risen sharply. Various long-term health effects Pesticide revelation has been studied, with cancer being the most concentrated. In general, cancer is an uncontrolled cell proliferation. Several different types of agricultural workers have been found to dominate in different types of cancer (Lebailly et al., 2018). Few studies have confirmed that Pesticide are the cause of various causes of cancer and other diseases in Haryana, although studies worldwide have shown that Pesticide do have such an effect.

The female reproductive system, namely the breast, uterus/uterus and ovaries Cancers are more common. Evidence of Pesticide revelation and breast cancer is contradictory; some studies have shown no correlation, while others have found high levels of Pesticide in breast cancer patients in India.

Neurotoxicity

The Pesticide is associated with an increased prevalence of several symptoms with little evidence of specificity. The most common symptoms of neurotoxicity include headache, dizziness, fatigue, insomnia, nausea, chest tightness and difficulty breathing, indicating cognitive (disordered/difficult concentration), exercise (weakness, tremor) and sensation (numbness, tingling, visual impairment) obstacle. Association studies on Pesticide revelation and neurotoxicity are primarily directed to long-term or occupational revelation. To this end, current and previous risks are relevant and need to be considered. For subjects still in the same occupation, current revelations may not reflect past revelations, as the available products and methods of use may change over time Neurotoxicity can be associated with a variety of different types of insect killers.

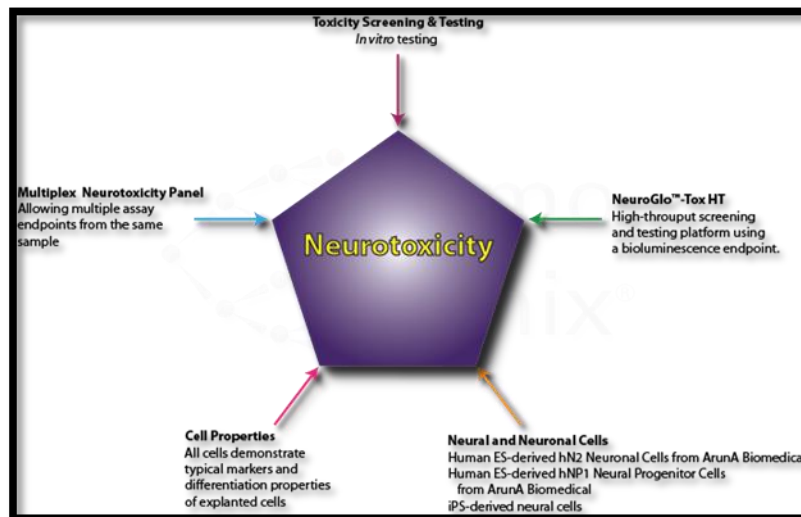


Figure 2: Showing Neurotoxicity

These include organophosphates (OPs) and carbamates and organochlorine insecticides and fungicides, but only the former have been extensively studied. Pregnancy and childhood revelation of OP acts as a developmental neurotoxic agent for the developing brain. Neurobehavioral tests are often supplemented with tests for sensory or motor function. One commonly used test is vibration sensitivity, which evaluates peripheral somato sensory function. There is evidence that this test is not affected by revelation to moderate insecticides. In one study, revelation to organophosphates showed reduced sensitivity to vibration (Stokes et al., 2015).

In another study, revelation to mixed Pesticide showed reduced sensitivity and signs of peripheral neuropathy, including peripheral nerve conduction Reduction. Similarly, few studies have considered motor functions such as tremor and weak grip, but there is hardly any inference about their relationship to Pesticide revelation. The Recurrent Pesticide revelation was found to be associated with decreased psychomotor function or loss of psychomotor function. Lack of psychomotor function may be due to sensory input, motion output or association delay damage caused by Pesticide.

The Revelation to the herbicide N, N'-dimethyl-4,4'-bipyridine (paraquat) or dithiocarbamate Pesticide (maneb) during pregnancy or childhood can permanently damage dopaminergic energy Neurons increase susceptibility to subsequent neurotoxic revelation (Thiruchelvam et al., 2012). Dithiocarbamate fungicides are also known to have potent dopaminergic activity and increase neurotoxicity (Thiruchelvam et al., 2012).

The Epidemiological studies have shown that revelation to Pesticide is a reasonable environmental risk factor for Parkinson's disease (PD). The revelation increased the risk of PD by a factor of 1.5-7 compared to unexposed individuals. Another epidemiological study showed a relationship between revelation to organochlorine pesticides such as dieldrin (mitochondrial toxin) and Parkinson's disease; one third compared to the control group. Residue levels of Pesticide were diagnosed in brain tissue samples from PD patients. In addition to PD, dementia and Alzheimer's disease have been found to be associated with occupational revelation to Pesticide several enzymes, including glutathione-s-transferase (GSTs), cytochrome P-450 family (CYP), esterase, flavin monooxygenase (FMO) and paraoxonase (PONs) are commonly involved in insect killers.

The initial metabolism is activation or inactivation of them. The Different studies have shown that Pesticide revelation may result in single nucleotide polymorphisms (SNPs) in genes encoding these enzymes, leading to an increased risk of PD. The GST gene family encodes genes essential for certain life processes and detoxification and toxicity mechanisms through the binding of reduced glutathione (GSH) to many substrates (such as pharmaceuticals and environmental contaminants). The CYP family gene CYP2*D6 is a toxin metabolism regulating gene involved in the detoxification of environmental chemicals and poisons. A strong association between polymorphisms of this gene and PD due to Pesticide revelation has been reported.

Genotoxic Effect

A variety of biomarkers are available for assessing transient and permanent genotoxic responses, most of which focus on cytogenetics, including sister chromatid exchange (SCEs) and chromosomal aberrations (Lebaillby et al., 2017). An increase in chromosomal aberrations in lymphocytes studied during intense spraying was observed.

A significant increase in one or several cytogenetic biomarkers was observed in the exposed group compared to the control group. Occupational revelation to Pesticide results in a higher degree of DNA damage in lymphocytes of greenhouse flowers. A study of workers engaged in pesticide production showed an increase in SCE in the exposed group. Most of these surveys are conducted on Pesticide applicators exposed to a wide range of insect killers.

In addition to the traditional cytogenetic approach, single-cell gel electrophoresis (the comet assay) can assess DNA fragmentation caused by various DNA damage, such as single-strand and double-strand breaks and base-labile sites, including basic sites. A recent study showed the genotoxic effects of Pesticide using the comet assay for DNA damage studies and the deletion of GST*M1 and GSTT1 genes in Haryana individuals exposed to Pesticide.

Immune Effect

The Chemicals such as organochlorine, organophosphorus and carbamate that are present in insect kills can alter the immune system. Pesticides have been reported to affect the immune system by relaxing, inhibiting or stimulating their function. Most Pesticide can perform all three modifications, but this depends on the duration of revelation, concentration and dose. In

addition, the cumulative particle levels and nutritional status of the exposed persons also play an important role. The Occupational revelation to pesticides was found to be associated with frequent infections and immune abnormalities. Repeated revelation to chlorpyrifos has been reported to cause immunological changes in peripheral lymphocyte phenotype (Thrasher et al., 2012). It was found that revelation to the fungicide penta chlorophenol, the insecticide chlorpyrifos and the bactericide chlordane were associated with lymphocyte abnormalities, such as increased activation and Excessive auto antibodies.

A variety of different Pesticide may have the ability to alter proteins. The change in the protein that causes the hapten is the simplest change observed in the immunological effects of Pesticide revelation. In addition to protein, direct cyto toxicity by mercury-containing insecticides has also been reported. It has been reported that most organochlorine pesticides have removed the control of complement. These Pesticide revelations were found to be associated with direct T cell triggering, and occasionally they also inhibited suppressor T cells.

A high level of correlation between organophosphate and organochlorine insecticides and Behcet's disease has been observed. This Pesticide may also alter hormone receptor sites that may damage the sodium pump. Therefore, laboratory and clinical studies have shown that all types of Pesticide can affect the human immune system. Nevertheless, when the Pesticide is removed from the body, an improvement in immune parameters occurs.

Impact on Male Fertility

The Pesticide can destroy sperm or its precursors, which can cause reversible or irreversible sperm damage, depending on the stage of differentiation affected by chemicals. Damage to spermatogonial cells results in irreversible damage to sperm production because these stem cells are not replenished. Fertility can be temporarily reduced due to the reduction in cell number, cell structure changes, motility and sperm motility due to the action of insect killers. However, these adverse reactions are referred to as stem cells to produce new cells through spermatogenesis after the elimination of harmful chemicals from the body (Giwerzman and Bonde 2012)

Some Pesticide is known to reduce steroid production by inhibiting specific enzymatic steps in the hormone biosynthetic pathway. This process results in decreased expression of steroidogenic acute regulatory (StAR) protein, which plays an important role in steroidogenesis by transferring cholesterol to the mitochondrial inner membrane. The Testosterone production by Leydig cells is inhibited by inhibition of expression of the protein, resulting in adverse effects on fertility. Reduced testosterone synthesis can occur through the action of insect killers, which can destroy the endocrine system. Interfering hormone receptor recognition and binding is a mechanism of endocrine disruption. Some Pesticide interacts with the nuclear estrogen receptor (ER) and androgen receptor (AR) of the steroid family, both of which are widely distributed in male reproductive tissues.

The central nervous system (CNS) is important in the integration of hormones and behavioral activities, and the disorder of these fine regulatory mechanisms can severely impair normal adaptive behavior and The neurotoxic effects of Pesticide are well known, and thus the ability of Pesticide to have a coordinated activity that disrupts CNS and brain cell function is acceptable. This disruption can lead to failure to achieve erection, difficulty in ejaculation and affect other reproductive functions. Therefore, Pesticide revelation has a significant adverse effect on male fertility.

Conclusion

The Pesticide contains a large number of different substances, have different structures and different toxicities, and work through different mechanisms. Different studies have reported a strong correlation between Pesticide revelation and various types of cancer, particularly leukemia and lymphoma. However, genetic polymorphisms that link Pesticide revelation to different cancer susceptibility have not been studied. All types of Pesticide can affect the immune system, leading to human dysfunction.

The Pathophysiological pathways have been documented, explaining the effects of Pesticide revelation on sperm quality and male fertility. Historically, most studies have focused on the neurotoxicity of organophosphates, although other types of insect killers, including organochlorines, carbamates, fungicides, and migration agents have also been studied. No studies have evaluated the relationship between herbicides and symptom prevalence or neurobehavioral performance, but Chemical substances are considered a risk factor for Parkinson's disease.

The Studies of neurotoxicity have demonstrated an increase in the prevalence of symptoms and changes in neurobehavioral performance that reflect cognitive and psychomotor dysfunction, but others have found that Pesticide revelation has a significant impact on sensory or motor function or direct measurement of neurological function small while it is important to identify the class of Pesticide and even specific chemicals associated with neurotoxicity, it is equally important to recognize that most workers are exposed to complex mixtures of insect killers, which may contribute to neurotoxicity.

The Occupational revelation by Pesticide can significantly alter DNA damage, but these changes appear to be transient. The increase in DNA damage levels during the middle and end of the spraying season may not be due to the accumulation of damage, although it is inversely related to the number of days without the use of insect killers. In addition, pregnant women exposed to Pesticide are at high risk of having children with disabilities because Pesticide are reported to have fetal toxicity and teratogenicity.

However, there are certain limitations in studying Pesticide revelation because it is affected by many factors, including the multiple chemicals involved, the uncertainty of the revelation associated with a particular work task or other event, and from multiple Source contribution. Revelation, including sources unrelated to occupation. Nonetheless, these studies have successfully demonstrated the role of Pesticide in providing susceptibility to different health effects, because the rural population of Haryana suffers from both acute and chronic revelation to various insect killers, contemporary agricultural workers and villagers living in the state face a high risk of developing life-threatening diseases and diseases.

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