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INJECTION USE AND PRACTICES AMONGST GENERAL PRACTITIONERS IN SINDH

1. **NIAZ AHMED SHAIKH**
MRCP (UK) FRCP (Edin) FRCP (London)
2. **SHAHEEN A. BHATTY**
FCPS
3. **AKHTAR ALI BALOCH**
MRCP, FRCP (Glasgow) FRCP (Dublin)
4. **ANEEL KUMAR SUMBHUANI**
FCPS
5. **MURTAZA MAQBOOL KHOMBATI**
MBBS
6. **AHSAN MEMON**
MBBS

1. ***Associate Professor of Medicine***
DOW UNIVERSITY OF HEALTH SCIENCES, KARACHI
Email niazshaikh7@hotmail.com
2. ***Assistant Professor of Medicine***
DOW UNIVERSITY OF HEALTH SCIENCES
3. ***Assistant Professor of Medicine***
DOW UNIVERSITY OF HEALTH SCIENCES
4. ***Post fellowship Trainee***
CIVIL HOSPITAL KARACHI
5. ***Medical Officer***
CIVIL HOSPITAL THATTA
6. ***Medical Officer***
CIVIL HOSPITAL HYDERABAD

Correspondence to:
NIAZ AHMED SHAIKH
MRCP (UK) FRCP (Edin) FRCP (London)
Associate Professor of Medicine
DOW UNIVERSITY OF HEALTH SCIENCES, KARACHI
Email niazshaikh7@hotmail.com

ABSTRACT

OBJECTIVE : *To describe and document injection use and practices among General Practitioners in Sindh and the knowledge of patients regarding the hazards of injections*
DESIGN. & SETTINGS: *A cross-sectional, observational study based on provincial survey of thirty four clinics (34) of qualified general practitioners from eight (8) cities of Sindh representing different districts.*
METHODOLOGY: *After the informed consent Adult patients coming out of these clinics were interviewed by two trained doctors and their answers were documented on well structured proforma. The results were analyzed by SPSS 15.*
RESULTS. *Total numbers of five hundred thirty four (534) patients were included in the study. Sixty nine percentages (69%) were male and thirty one percentages (31%) were females. Mean age of study population was 40±13 years. A total of four hundred ninety seven patients (93%) reported to have received injection either alone or with oral drugs, 178 (35.8%) received only one injection, 162 (32.6%) received two injections and 157 (31.6%) received three or more injections. Eighty (16.1%) patients reported that same syringe was used for I/M & I/V purposes. The new disposable syringes were used in three hundred forty seven (69.8%) patients. Two hundred twenty five (45.3%) patients themselves requested the injections to get relief from their ailments. Most of the patients (80.5%) received injections by dispensers /clinic assistants. Majority (72.9%) of the syringes were either thrown in waste bins or left on tables only 3.6% syringes were disposed of safely. Two hundred ninety six patients (55.4%) had also received injection in last week, seventy six percentages (76%) believed that there are no side effects of injections,*
CONCLUSIONS. *Injection use is extremely common and unsafe in general practice and the overuse is alarming. A countrywide multidisciplinary initiatives and measures are required to achieve safe and appropriate use and disposal of injections through health education of the general public including behavior change of both patients as well as the doctors.*

KEYWORDS: Injection Use, Practices, General Practitioners, Sindh

INTRODUCTION:

Injection is the most common therapeutic medical procedure performed on patients through out the world. According to WHO each year at least 16 billion injections are administered in developing and transitional countries, of these 95% are used for therapeutic purpose and 5% for. immunization purpose [1].

World health organization defines: a safe injection 'as one that does not harm the recipient, does not expose the provider to any avoidable risk, and does not result in any waste that is dangerous to community[2]. In 2000, WHO estimated that contaminated injections caused annually 21 million HBV infections, two million of HCV infections and 260 000 HIV infections worldwide.[3]Each year, unsafe injection cause an estimated 1.3 millions early death, a loss of 26 millions years of life, and an annual burden of US $ 535 millions in direct medical costs.[4]

There is significant sociocultural and geographical difference in injection practices throughout the world. The injection use varies among different countries ranging from 1.7 in Brazil to 13 injections per person per year in Mongolia [5]. Pakistan among the 13 developing countries, has the highest prevalence rate (8.5% per person per year) of injection use.[6] Injection practices in Pakistan are more similar to those in other countries in South-East Asia, and in the eastern Mediterranean region.[7]

A large number of people in Pakistan go to General Practitioners who are still the major

health providers especially in rural set up. Although the awareness about the transmission of blood borne infections specially Hepatitis B and C as well as HIV has increased among the health care providers as well as general public but still a large number of patients receive injections from qualified as well as unqualified doctors and paramedical personals frequently, indiscriminately and often without proper safety precautions. So is the case in the province of Sindh where in general practice, the use of injections by qualified doctors as well as by the quacks both in urban as well as rural setting seem to flourish. Earlier Janjua NZ et al [7] in their study based on a house hold survey conducted in two districts of Sindh, had reported and projected the highest ever ratio of injections per capita (13.6 injections/person/year) . In a study from district Badin, 95% (n=151/159) of the general practitioners were found to have prescribed injections inappropriately. [8] Previous studies have been conducted in one or two districts of Sindh [7, 8] and the results had been projected to be representative of whole province as well as country.

This study was aimed at determining the status of injection use by general practitioners and the related practices in the different cities of Sindh as well as the patients attitudes and knowledge regarding the injection use.

OBJECTIVES:

To describe and document injection use and practices among General practitioners in Sindh and the knowledge of patients regarding the hazards of injections.

STUDY DESIGN:

A cross sectional survey.

MATERIAL AND METHODS:

A survey questionnaire consisting of twelve close ended questions was designed for this study and two doctors specially trained for the study & this study was conducted in eight cities, representing different districts of Sindh. The cities and the clinics were chosen randomly as per convenience. These doctors visited the clinics of qualified (MBBS as per the sign board outside the clinic) General Practitioners (three to five) in each city and interviewed the adult (=/>15 years) patients coming out of those clinics after taking informed consent .Patients were helped in understanding the questions in their local language and their response was marked / written on proforma. The study was conducted during the period of August – September 2008. . All the forms were collected and data was entered and processed in SPSS version 15. It was entered by two people to control the bias. Using SPSS frequencies and percentages of responses were computed, mean with standard deviations was calculated for age.

TABLE 1. INJECTION USAGE IN DIFFERENT DISTRICTS OF SINDH

S.NO	District	No of patients interviewed	No of patients receiving injection with percentage
1	KARACHI	100	89 (89%)
2	THATTA	40	40 (100%)
3	HYDERABAD	78	72 (92.3%)
4	NAWABSHAH	69	64 (92.7%)
5	BADIN	40	36 (90%)
6	JACOBABAD	69	63 (91%)
7	TANDOADAM	88	83 (94%)
8	LARKANA	50	50 (100%)
	TOTAL	**534**	**497 (93%)**

TABLE -2 INJECTION PRACTICES AS REPORTED BY PATIENTS

Response	Number of Patients	Percentage
1.Patients who received injections	497	(93%)
2.Number of injections received		
ONE	178	(35.8%)
TWO	162	(32.6%)
THREE OR MORE	157	(31.6%)
3.Route of Administration		
INTRAMUSCULAR	171	(34.4%)
INTRAVENOUS	193	(38.8%)
BOTH	133	(26.8%)
4.Same injection used for i/m & i/v		
YES	80	(16.1%)
NO	344	(69.2%)
DID NIOT NOTICE	73	(14.7%)
5. Method of disposal		
Needle cutter	18	(3.6%)
Thrown in dustbin	311	(62.6%)
Kept Back on table	51	(10.3%)
Don't Notices	117	(23.5%)

RESULTS:

A total of thirty four (34) clinics were included in the study from eight cities of Sindh. Total number of five hundred thirty four (534) patients (Table 1) were included in the study. Three hundred seventy 370 (69%) were male and one hundred sixty four 164(31%) were females. Mean age of study population was 40 ±13 years.

A total of four hundred ninety seven patients (n=497, 93%) received injection either alone or with oral drugs, while thirty seven patients (n=37, 7%) were prescribed the oral drugs only. Out of those 497 patients who received injections, 178 (35.8%) received only one injection, 162 (32.6%) received two injections and 157 (31.6%) received three or more injections. The route of administration was

intramuscular in 219 (44.1%) intravenous 170 (34.2 %) and both in 108 (21.7%) patients. Eighty (n=80, 16.1%) patients reported that same syringe was used for I/M and I/V purposes. The new disposable syringes (defined as one opened in front of the patient) were used in three hundred forty seven (n=347, 69.8%) patients while in one hundred sixteen (n=116, 23.3%) patients new disposable syringes were not used. Two hundred twenty five (n=225, 45.3%) patients themselves requested the injections to get relief from their ailments while in two hundred seventy two patients (n=272, 54.7%) injections were prescribed by doctors. Most of the patients (n=400, 80.5%) received injections by dispensers / clinic assistants while in ninety seven patients (n= 97, 19.5 %) injections were given by the doctors.

Result regarding disposal of syringes are shown in Table 2. Only 3.6% syringes were disposed of safely.

Of the total study population (n=534) two hundred ninety six patients (n=296, 55.4%) had also received injection in last week, one ninety three (n=193, 36.1 %) had received the injection in last month as well. Most of the patients (n=406, 76%) believed that there are no side effects of injections, 68.2% (n=374) believed that no infection can be transmitted with the use of syringes, while 31.8% (n=170) had some knowledge about transmission of hepatitis and 14.6 % (n=78) knew about transmission of HIV. (Table 3)

TABLE -3 PATIENTS ATTITUDE AND KNOWLEDGE ABOUT INJECTIONS

Question	Yes	No	Don't know
You asked for injection	225 (45.3%)	272 (54.7%)	
Doctor administered the injection	97 (19.5%)	400 (80.5%)	
New syringe used	347 (69.8%)	16 (23.3%)	29 (5.8 %)
Received injection in last week as well	296/534 (55.4%)	237 (44.6%)	
Received injection in last month as well	193/534 (36.1%)	341 (63.9%)	
Awareness about any injection hazard	205/534 (38.4%)	329(61.6%)	
Can hepatitis be transferred by injections	170/534 (31.8%)	239 (44.8%)	125 (23.4%)
Can HIV/AIDS be transferred by injections	79/534 (14.8%)	161 (30.1%)	294 (55.1%)

DISCUSSION:

The injections are administered for various reasons. Some of these being that injections are presumed to be more rewarding economically, patients demand injections for rapid recovery from disease, promotion of injections by providers as a means to reduce non-compliance and aggressive promotion of injections by pharmaceutical companies..[9, 10] Poor injection practices put the provider, consumer as well as the community at risk of infections.

Injection overuse in Pakistan is a well known fact to the extent of becoming a therapeutic norm at the primary care centers. This study further highlights the injection overuse and unsafe practices amongst the general practitioners in Sindh.

INJECTION USAGE:

Our patients specially belonging to lower socioeconomic status generally like and prefer injections. This study revealed that 93% patients had received injection on their visit to doctor, 55.4% had also received injection in last week, 36.1 % had received the injection in last month as well.In a survey of small number of patients (198) at University clinic in Karachi, 49% of the patients had received injections at their last visit, 3.5% had received 10 or more injections in the last year from a health care provider. 91% reported that the doctor always recommends an injection.[11]

A telephonic cross-sectional survey of twenty general practitioners in urban and rural areas of Murree, was conducted in the summer of 2000. Sixteen (80%) of the general practitioners were giving injections to every patient and 53% and 28% in rural and urban area reported preference for injection as an essential component of treatment respectively [12]

In another local survey of 1150 subjects in Sindh province by Janjua, 848 (74%) reported having received at least one injection during the past 3 months. [13] Similar attitude of patients and doctors has also been reported from other developing countries In a house hold survey in Egypt , of 4197 persons interviewed , 1101 (26.2%) had received an injection in the past three months ,77% reportedly for therapeutic reasons and 8.4% reported that the provider did not use a syringe taken from a closed sealed packet. Overall, respondents reported receiving on average 4.2 injections per year.[14]

In a survey of 500 residents in Takeo, Combodia, the overall injection rate was 5.9 injections per person-year with 40% of the participants reporting receipt of one or more injections during the previous 6 months, nearly one-half reported receiving more than 5 injections.[15]In Korea nationwide injection prescription rate in primary care settings was 39.7% in 2003, which was higher than that of tertiary (8.8%) and general (13.9%) hospitals. The majority of injections (92.3%) were intramuscular, [16]

Majority (64.2%) of our patients received more than one injection in that visit and intramuscular route was relatively more common, possibly because of convenience and presumed safety as compared to intravenous route. This aspect of injection use has not been much studied in other local studies

There are many reasons and incentives for both patients as well as the treating doctor for this over prescription of injections. Patients themselves ask for it, believing that injections are more effective and provide quick relief to shorten the duration of illness. In a cross sectional study of 1150 subjects in Sindh, who had received at least one injection in last three months, Seventy-one percent (815/1150) believed that injections act faster than oral drugs and relieve symptoms quickly.[13]

There is an economical aspect to it as well as because presumably reducing the duration of the symptoms as well as their illness by injections rather than oral medications will make them fit earlier and cause less economic loss to them specially those who are working on daily wages. Apart from quick financial benefits by injections as compared to oral prescriptions, GPs make sure that the patients would at least return few times to get those unidentified injections rather than oral prescriptions which patients might get from stores without visiting the doctor. Also by providing early and quick relief to their patients, GPs want to demonstrate their capability and efficiency for gaining patients faith as well as reputation in the community for a long term benefits.

REUSE OF SYRINGES

Relatively larger number of patients (69.8%) reported that they received new disposable syringes. These figures are higher than previously reported figures of 54%.[7] In 16.1% cases same syringe and needle was used for both IV and IM route. Although the quality of these syringes could not be assessed as recycling of the plastic syringes in new wrappers is well known in our country.

Huntin YJF et al in his world wide literature review reported highest reuse of syringes in South East Asia, the Mediterranean region and western Pacific region that ranges from 1.2% to 75%. [17] A study in southern part of India carried by Rajasekaran M et al reported only 35 % providers used disposable syringe[18]. Talaalt et al from Egypt reported 92% care provider didn't take the syringe from close sealed packet. [14]

Syringe Disposal

It is alarming to note that only 3.6% of the needles used were disposed off in a relatively safe manner by the use of needle cutters while in 62.6% of the cases, syringes along with the needles were thrown in the waste bucket. About 10% of the syringes were left on the table after use where possibility of their reuse by the doctors could not be ruled out.

Incinerators are considered to be a safe method of disposal of contaminated sharp equipments including syringes. However in our country most of the hospitals even in bigger cities do not have this system and this burden of disposal is left to poorly organized , unsafe and ineffective municipal waste collecting system Disposal of contaminated needles, syringes, and other medical waste in accessible public areas is common which may lead to transmission of blood borne infections to children who play in the open as well as to the municipal workers and waste collectors who may get infected by the needle pricks. Moreover these syringes are collected by waste scavengers and later on sold as new syringes..

KNOWLEDGE AMONGST PATIENTS

A very large number of patients (61.6%) were not aware of any side effects of injections. Knowledge amongst the patients about hepatitis and HIV was found very low in our study as compared to study conducted in southern India by Rajasekaran M [18] and in Mongolia by Logez S et al .[19] Murhekar MV from India in his study found that knowledge amongst injection provider about hepatitis and HIV is good while amongst patients is very low. [20]

LIMITATIONS:

This study had several limitations. First, the survey did not capture the medical indications that were associated with the receipt of injections. Second, only adult patients were studied. Third, resource constraints required the survey to focus on limited number of cities and in one province instead of being conducted nationwide. Fourth, because only (presumed) qualified doctors were surveyed, we could not assess injection use and practices of the unqualified (quacks) in the informal health sector where the results could be much different.

CONCLUSIONS AND RECOMMENDATIONS

Injection use is extremely common and unsafe in general practice, overuse is alarming and possibly contributing heavily to the increasing incidence and prevalence of hepatitis B and C infection in our country. A countrywide multidisciplinary initiative is necessary to achieve safe and appropriate use of injections through:

(1) Health education of the general public

(2) Behavior change of both patients as well as doctors

(3) Increasing availability of injection devices and sharps boxes, and

(4) appropriate sharps waste management.

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