

## Intramuscular Injection Practices Among Infants

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Manuscript received: May 10, 2007; Initial review completed: June 12, 2007;

Revision accepted: July 20, 2007.

*Administration of unnecessary Intramuscular (IM) Injections to infants for trivial illness is a common problem. This descriptive study included 120 infants who received at least one IM injection for their current illness. Data were collected using semi structured questionnaire to their mothers. 91% of infants received unnecessary IM injections for minor problems like upper respiratory tract infection. IM injections were administered at the wrong site in 97% of the infants. Information regarding IM injections was inadequate in mothers. Intensive health education regarding safe injection practices for the public and health care providers is essential.*

**Key words:** Infants, Intramuscular Injections.

**M**OST of the common ailments among infants can be managed with oral medications. However, administration of intramuscular (IM) injections for these minor problems is quite rampant. The combination of injection overuse and unsafe practices increases the risk of transmission of pathogens and local complications like abscess and nerve injury. We conducted this study to describe the prevalent IM injection practices among infants.

### Subjects and Methods

Infants brought to the Pediatric Outpatient Department of Mahatma Gandhi Medical College, Pondicherry from August 2006 to October 2006 were registered. Among them, infants who had received medical care in the previous 3 days for the current illness and had received at least one IM injection were included in the study. Their mothers were administered a pre tested semi structured questionnaire in the local language Tamil and data collected. Drug prescriptions received by the study group were also analyzed.

### Results

Two hundred and fifty two infants registered, 131 (66 males, 54 females) had received medical consultation elsewhere for the current illness in the previous 3 days. Among them, 120 (91%) had received at least one IM Injection. Sixty two (52%) infants were from rural areas while 58 (48%) were

from urban region. Problems for which IM injections were administered are listed in *Table I*.

Eighty four (70%) infants had received IM injections from private health care providers while 36 (30%) were administered the same at Government health care facilities either by an ANM or Staff Nurse. 40% of the private health care providers were unqualified. IM injections were administered at the wrong site (gluteal region) in 116 (97%) infants while only 4 (3%) of them had received it at the correct site (anterolateral thigh). Glass and plastic syringes were used in 24% and 76% of infants respectively.

The prescriptions available for 88 infants were analyzed. 32 infants had received IM steroids. IM Paracetamol was administered to 16 while

**TABLE I**— Common Problems for which IM Injections were Administered.

Problem	No. of infants	Percentage
Upper respiratory tract infection	52	43
Lower respiratory tract infection	10	8
Acute watery diarrhea	22	18
Viral fever	15	13
Pyoderma	12	10
Acute suppurative otitis media	5	4
Convulsions	4	3

antibiotics (Cefotaxime / Ceftriaxone / Gentamicin) were given for 24 infants. The remaining prescriptions did not show any details about the IM injection administered. 97% of the mothers revealed that there was no discussion regarding the necessity of an IM injection during the medical consultation and only 3% of them had discussions regarding this issue with the health care provider. Most mothers felt that IM injections provide quick relief and hence preferred them over oral medications. The common opinion of mothers regarding IM injections are shown in *Table II*.

### Discussion

According to WHO estimates, worldwide every year unsafe injections result in 80,000-160,000 new HIV-1 infections, 8-16 million Hepatitis B infections, 2.3-4.7 million Hepatitis C infections(1). A nationwide comprehensive study 'Assessment of Injection Practices in India' indicates that a very large number (3-6 billion) of injections are administered in India every year. Almost every second patient in an outpatient clinic in our country gets prescription for an injection irrespective of the illness. Also, nearly two-thirds of these injections are unsafe (62.9%)(2). In this study, 91% of infants had received IM injections for trivial illness like upper respiratory tract infection, where it is not necessary. The anterolateral thigh is the preferred site of IM injection for infants less than 12 months(3). However, in this study, IM injections were administered at the wrong site (gluteal region) in 97% of the infants. The higher proportion of unqualified personnel administering IM injections is also alarming. According to Greenhalgh, 96% of all injections given by private doctors were of antibiotics, vitamins and analgesics(4). A significant percentage of administration of IM steroids for

infants is noted in our study in addition to antibiotics and analgesics. Ninety seven per cent of the mothers revealed that there was no discussion regarding the necessity of an IM injection during the medical consultation and only 3% of them had discussions regarding this issue with the health care provider. In majority of the situations, prescriber decides/pushes, convinces the patients to get an injection(2). Seventy per cent infants studied had received IM injections from private health care providers. The inadequate information regarding IM Injections among mothers is also quite evident. Hence, intensive health education regarding safe injection practices for the public as well as the health care providers, especially for those in the private sector is essential.

The study was conducted in a tertiary care hospital and so the data may not truly reflect that of the population. Further population based research may be required to assess the magnitude of the problem.

The morbidity related to unsafe IM injections especially traumatic neuritis is a concern in the context of AFP surveillance. The cost and man power involved in tracking children with traumatic neuritis as part of AFP surveillance is phenomenal and can be definitely reduced if the health education regarding safe IM injections is adequate. In view of frequent and often irrational prescriptions for injections, wide variation in the training and background of injection givers in the country and field realities of inadequate sterilization coupled with reuse and improper disposal of injection waste, the need to explore appropriate ways to make injections safe in this country assumes urgency(2).

*Contributors:* GD was involved in designing the study and data collection and analysis. AB helped in data

**TABLE II**—Common Opinions of Mothers Regarding IM Injections.

Common opinions	Yes	No
Many potent medicines are available as oral preparations	36 (30%)	84 (70%)
Many IM injections are unnecessary	8 (7%)	112 (93%)
Improperly administered injections can result in paresis of limb	5 (4%)	115 (96%)
Use of unsterile needles could result in dangerous diseases like Hepatitis B & HIV	7 (6%)	113 (94%)
The best site of IM injection in infants is anterolateral thigh	5 (4%)	115 (96%)

### What this Study Adds

- In Pondicherry, more than 90% IM injections given to infants are neither necessary nor administered at the correct site.

analysis and prepared manuscript. AA helped in data collection. SAK supervised the study.

*Funding:* None.

*Competing interests:* None.

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