The aware, alert, avert strategy for immune reconstitution inflammatory syndrome in HIV/AIDS

Sir,

HIV immune reconstitution inflammatory syndrome (IRIS) is one of the most significant challenges of highly active antiretroviral treatment (ART) faced by physicians across the world. Through this letter, I wish to draw the attention of readers to a simple aware, alert, avert strategy that can be used to deal with IRIS, especially in areas with a high load of HIV/AIDS patients.

Aware: Awareness about IRIS among physicians of all disciplines is necessary for prompt identification in clinical settings.

IRIS occurs because of the enhancement in the immune system of the body that renews its ability to mount a strong inflammatory response. This manifests clinically as worsening of symptoms of the patient initiated on ART.[1] IRIS can be classified as:

1. Paradoxical IRIS: Paradoxical worsening of an existing infection/disease process
2. Unmasking IRIS: Appearance of a new infection/disease process soon after initiation of therapy.[2]

Alert: Crucial to the prevention of IRIS is identification and understanding of the risk factors and staying alert to suspect them. Table 1 enlists the major risk factors of the two broad categories of IRIS, modeled on tuberculosis-IRIS.

Avert: Based on the risk factors, some basic preventive strategies have been devised through research and clinical experience that can be used to avert IRIS.

Prevention of unmasking IRIS can be achieved through:

1. Systematic screening for opportunistic infections (OIs) before initiation of ART
2. Screening of all patients, irrespective of the presence of symptoms in endemic areas
3. Screening of patients for subclinical cryptococcal infection at the time of entry into ART programs.[1]

Table 1: Risk factors for development of unmasking tuberculosis-immune reconstitution inflammatory syndrome versus paradoxical tuberculosis-immune reconstitution inflammatory syndrome in HIV infected patients

Unmasking TB-IRIS	Paradoxical TB-IRIS
Higher baseline HIV-RNA load[3]	Lower CD4 count at ART initiation[5]
Stronger CD4% increase[3]	Higher HIV viral load[5]
HIV-RNA decline of more than 3 log after 1 month on cART[3]	Lower BMI[5]
African origin[3]	≤30 days of TB therapy before ART[4]
Low BMI[4]	
High CRP[4]	
Subclinical disease (particularly lymphadenopathy)[4]	
Low hemoglobin[4]	
>10% weight loss[4]	

BMI = Body mass index; CRP = C-reactive protein; ART = Antiretroviral therapy; TB = Tuberculosis; IRIS = Immune reconstitution inflammatory syndrome; cART = Combination antiretroviral therapy

Preventive strategies for paradoxical IRIS include:

1. Prompt diagnosis and intensive treatment of the OI
2. Deferral of ART initiation based on CD4 count of the patient.[6] Deferral may prove to be beneficial for OIs such as cryptococcal or tubercular meningitis but may reduce survival in *Pneumocystis jirovecii* infection.

The knowledge about IRIS, its risk factors and preventive strategies are much needed among physicians of all disciplines, especially in regions of high endemicity. This simple strategy, proposed through this letter, can greatly help in curbing the rise in this challenge in the management of HIV/AIDS and will go a long way in reducing the overall morbidity and mortality associated with it.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Udhayvir Singh Grewal

Department of Microbiology, Government Medical College and Rajindra Hospital, Patiala, Punjab, India

Address for correspondence: Dr. Udhayvir Singh Grewal, Government Medical College and Rajindra Hospital, Patiala, Punjab, India.
E-mail: grewaludhayvirsingh@yahoo.com

REFERENCES

1. Shahani L, Hamill RJ. Therapeutics targeting inflammation in the immune reconstitution inflammatory syndrome. Transl

Res 2016;167:88-103.
2. Sharma SK, Soneja M. HIV & immune reconstitution inflammatory syndrome (IRIS). Indian J Med Res 2011;134:866-77.
3. Valin N, Pacanowski J, Denoeud L, Lacombe K, Lalande V, Fonquernie L, *et al.* Risk factors for 'unmasking immune reconstitution inflammatory syndrome' presentation of tuberculosis following combination antiretroviral therapy initiation in HIV-infected patients. AIDS 2010;24:1519-25.
4. Haddow LJ, Moosa MY, Mosam A, Moodley P, Parboosing R, Easterbrook PJ. Incidence, clinical spectrum, risk factors and impact of HIV-associated immune reconstitution inflammatory syndrome in South Africa. PLoS One 2012;7:e40623.
5. Bonnet M, Baudin E, Jani IV, Nunes E, Verhoustraten F, Calmy A, *et al.* Incidence of paradoxical tuberculosis-associated immune reconstitution inflammatory syndrome and impact on patient outcome. PLoS One 2013;8:e84585.
6. National Institutes of Health, AIDSinfo. Guidelines for Prevention and Treatment of Opportunistic Infections in HIV-Infected Adults and Adolescents; 2013. http://www.aidsinfo.nih.gov. [Last accessed on 2017 May 02].

Access this article online

Quick Response Code:

Website: www.jmsjournal.net

DOI: 10.4103/jrms.JRMS_206_16

How to cite this article: Grewal US. The aware, alert, avert strategy for immune reconstitution inflammatory syndrome in HIV/AIDS. J Res Med Sci 2017;22:93.