TABLE I SERUM 25-HYDROXY VITAMIN D, CALCIUM AND PHOSPHORUS IN PRETERM NEONATES

Characteristics	*All infants (n=79)*	*Infants born <28 weeks (n=17)*	*Infants 28-32 weeks (n=62)*
Males	44 (55.7)	7 (41.2)	37 (59.7)
Gestational age (weeks)*	29.8 (2.5)	25.6 (1.3)	31 (1.2)
Birth weight (g)*	1438.1(464.8)	842.9(168.9)	1601.3 (378.1)
25(OH)D at 48-72 (ng/mL)*	14.8 (7)	10.1 (5.6)	16.1 (6.9)
Infants with 25(OH)D <30 ng/mL	78 (99.9)	17 (100)	61 (98.4)
Infants with 25(OH)D <20 ng/mL	59 (74.7)	16 (94.1)	43 (69.3)
Infants with 25OHD <10 ng/mL	31 (39.2)	10 (58.8)	21 (33.9)
Ca^{++} at 48-72 hours (mmol/L)*	0.95 (0.13)	0.91 (0.13)	0.96 (0.13)
Phosphorus at 2-3 weeks (mg/dL)*	4.1 (1.1)	3.1 (1)	4.4 (0.9)
ALP at 2-3 weeks (U/L)*	460.7 (160.5)	597 (188.7)	423.3 (138.2)

*Values in No. (%) or * mean (SD).*

preterm and full-term infants at birth. Pediatr Res. 2014;75:75-80.
7. Dokos C, Tsakalidis C, Tragiannidis A, Rallis D. Inside the "fragile" infant: pathophysiology, molecular background, risk factors and investigation of neonatal osteopenia. Clin Cases Miner Bone Metab. 2013;10:86-90.

Immune Thrombocytopenic Purpura in Children of Eastern Henan Province, China

In this retrospective cohort study conducted in 63 children with idiopathic thrombocytopenic purpura (ITP) in China; petechiae, bruises and bleeding were the major presentations. Most cases required therapy with one/more treatment options.

Keywords: *Clinical profile, Thrombocytopenia, Treatment*

Immune thrombocytopenic purpura (ITP) is an acquired autoimmune hematologic condition characterized by destruction of platelets leading to isolated thrombocytopenia [1,2]. It is customarily a self-limiting ailment in otherwise healthy children presenting with bruising, purpura, petechiae, mucosal bleeding, and thromvocytopenia, plasma anti-platelet antibodies, and rise in megakaryocytes [3-5].

This retrospective study was performed in the pediatric ward and outpatient clinic of a tertiary hospital in eastern Henan province, China over a period of five years (August 2009 to September 2014) to describe clinical features in children with ITP. The study target population included children below 18 years' age diagnosed with ITP [as per International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10) 2010 D69.3] and treated at the hospital. A questionnaire was used for collection of clinical and demographic data of the children based on medical (hospital/clinic) records. Information on prescription drugs to patients and treatment outcome were collected. The diagnosis was based on clinical history as well as physical examination~ along with tests revealing isolated thrombocytopenia (platelet count $<100\times10^9$/L), normal peripheral blood smear, white blood cells, and no underlying malignancies and conditions. Details on bone marrow examination if carried out were also collected. Chronic ITP was defined as persistent thrombocytopenia, lasting greater than six months after the initial diagnosis. The study got the approval from the institutional Ethics Committee.

Of the 63 children studied, 73% were diagnosed with acute ITP and 27% with chronic ITP. Acute ITP and chronic ITP were more prevalent in boys (52.2% and 58.8%, respectively) compared to girls (47.8% and 41.2%, respectively), though insignificant. Nearly 20.6% of children had family history of ITP (***Table* I**). Bone marrow aspiration was performed in 36 (57.1%) cases to exclude other pathology; all of which confirmed the diagnosis. No significant seasonal difference was noted. History of preceeding viral infection was frequent in relation to both acute and chronic ITP (73.9% and 64.7%). The most widely used treatment for children was intravenous immunoglobulin (IVIG) (61.9%) followed by

TABLE I SOCIODEMOGRAPHIC CHARACTERISTICS, CLINICAL AND PATHOLOGICAL FEATURES OF CHILDREN WITH ITP (*N*=63)

Characteristics	*ITP*			*P value*
	Total (n=63)	*Acute (n=46)*	*Chronic (n=17)*	
Age, yrs				
Mean (SD)	4.2 (3.7)	4.3 (3.8)	4.0 (3.6)	0.45
Median (Range)	3 (0.4-16.2)	3 (0.4-16.2)	3.2 (0.7-15.5)	
Gender				
Male, *n* (%)	34 (53.9)	24 (52.2)	10 (58.8)	0.85
Family history of ITP	13 (20.6)	9 (19.6)	4 (23.5)	0.73
Abrupt onset (<1 week), *n* (%)	47 (74.6)	38 (82.6)	9 (52.9)	0.02
Clinical signs, n (%)				
Petechiae	54 (85.7)	39 (84.8)	15 (88.2)	1.00
Bruising	46 (73.0)	35 (76.1)	11 (64.7)	0.52
Bleeding	23 (36.5)	16 (34.8)	7 (4.2)	0.86
Epistaxis	15 (23.8)	11 (23.9)	4 (23.5)	1.00
Lymphadenopathy	7 (11.1)	7 (15.2)	0 (0)	0.17
Gastrointestinal bleed	4 (6.4)	3 (6.5)	1 (5.9)	
Splenomegaly	3 (4.8)	1 (2.2)	2 (11.8)	0.17
Hepatomegaly	3 (4.8)	1 (2.2)	2 (11.8)	0.17
Treatment, n (%)				
IVIG	39 (61.9)	29 (63.0)	10 (58.8)	0.99
Steroid + IVIG	10 (15.9)	6 (13.0)	4 (23.5)	0.44
Anti-Rh(D) immunoglobulin	6 (9.5)	4 (8.7)	2 (11.8)	0.66
Rituximab	1 (1.6)	0 (0)	1 (5.9)	0.27
Splenectomy	1 (1.6)	1 (2.2)	0 (0)	1.00
Only observation	6 (9.5)	6 (13.0)	0 (0)	0.18

ITP = Immune thrombocytopenia purpura; IVIG = Intravenous immunoglobulin.

steroids+IVIG (15.9%), anti-Rh(D) immunoglobulin (9.5%), rituximab and splenectomy (1.6% each).

The treatment of ITP in different parts of the world varies with respect to criteria for initiation of treatment, which treatment modality to be used, and whether or not hospitalization is required [6]. Limitations of present study included information bias as well as selection bias, and restricted number of patients. We were unable to evaluate all variables and were restricted by the in completeness of proper documentation.

Although ITP is self-limiting in most of the cases, it tends to be troublesome diagnosis for physicians and parents. Petechiae, bruises and bleeding were the most common presentations in children with ITP in present study. Most of cases of ITP needed treatment with one/ more of the available options. The overall prognosis was found to be good.

***QIU-XIA FAN, [#]CHUN-MEI WANG, [$]SHU-XIA CHEN, XIN-GUANG LIU AND BO HAN**

*Departments of the First People's Hospital of Shangqiu City, Shangqiu, [#]Pediatrics, the First Affiliated Hospital of Zhengzhou University, Zhengzhou,and [$]Hematology, the First People's Hospital of Shangqiu City, Shangqiu, China. *fanqiuxia084@hotmail.com*

REFERENCES

1. Rodeghiero F, Stasi R, Gernsheimer T, Michel M, Provan D, Arnold DM, *et al*. Standardization of terminology, definitions and outcome criteria in immune thrombocytopenic purpura of adults and children: Report from an international working group. Blood. 2009;113:23-86.
2. D'Orazio JA, Neely J, Farhoudi N. ITP in children: Pathophysiology and current treatment approaches. J Pediatr Hematol Oncol. 2013;35:1.
3. Nugent DJ. Immune thrombocytopenic purpura of childhood. Hematol Am Soc Hematol Educ Program. 2006;97-103.
4. Rehman A. Acute immune thrombocytopenic purpura in children. Turk J Hematol. 2007;24:41-51.
5. Cines DB, Blanchette VS. Immune thrombocytopenic purpura. N Engl J Med. 2002;346:995-1008.
6. British committee for standard in Hematology general Hematology Task force guidelines for the investigation and management of idiopathic thrombocytopenic purpura (ITP) in adults, children and in pregnancy. Br J Haematol. 2003;120:574-96.1.00.