Erythrocyte indices Five practical lecture -Clinical pathology

Erythrocyte indices are used for typing of anaemia, it is a calculation obtained from RBC count, PCV and Hb values .It includes:

a-Mean corpuscular (cell) volume (MCV):-

MCV = **(PCV % x10)/(RBC count)**

Is a measure of the size of the average erythrocyte and Measured **in Femtoliter (fl),** increase in MCV indicates **macrocytic type of anaemia** due to increase in size of RBCs as in responsive anaemia which is characterized by increase in the number of large- sized immature rbcs in the peripheral circulation.

b-Mean corpuscular (cell) haemoglobin (MCH):-

MCH = (Hb g/dl x10)/(RBC count)

Is a measure of the concentration of hemoglobin in the average packed cell volume (PCV) and Measured in **Pico gram (pg).** A decrease in MCH value below the minimal normal level indicate **hypochromic anaemia**, normal MCH with anaemia indicate **a normochromic type.**

c- Mean corpuscular haemoglobin concentration (MCHC):-

MCHC = (Hb g/dl x100)/(PCV%)

It is measured in **gram/deciliter(g/dl),** decrease in MCHC indicates **hypochromic anaemia**, increase in MCHC is not detected, if it is observed that is **artifactual**.

Page 2

Table (1): Normal value of blood parameter and erythrocyte indices in some animals

Animal species	Hb g/dl	PCV %	RBCs x10$^{6/\mu l}$	MCV (fl)	MCH (pg)	MCHC (g/dl)
Cow	8-15	24-46	5-10	60-40	13-18	33-37
Horse	11-19	32-52	6.5-12.5	37-49	15-19	34-37
Dog	12-18	37 55	5.5-8.5	77-66	22-27	32-36
Sheep	9-15	27-45	9-15	23-48	8-12	31-34
Goat	8-12	22-38	8-18	16-25	5.2-8	30-36